

# **EARNINGS MANAGEMENT AND CORPORATE SOCIAL RESPONSIBILITY: THE CASE OF UK**

**by**

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## **STUDENT DECLARATION**

I declare that while registered as a candidate for the research degree, I have not been a registered candidate or enrolled student for another award of the University or other academic or professional institution. I also I declare that no material contained in the thesis has been used in any other submission for an academic award and is solely my own work.

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

*In the name of Allah, Most Gracious, Most Merciful*

## DEDICATION

### *My Brother*

Who passed away during my study

### *My beloved parents*

"My Lord! Bestow on them thy Mercy even as they cherished me in childhood."  
(Quran, S17: 24)

### *My Wife*

For her continuous love, patient and support

### *Honey Sons and My Daughter*

Hosam, Ahmend and Maha

### *Beloved Brothers, Sisters and their Families*

For their support and love

## Abstract

The primary focus of this study is to investigate the relation between Earnings Management (EM) and Corporate Social Responsibility (CSR) in the UK. While there are few studies in the existing literature that examined the relationship between EM and CSR, there is a lack of studies examining this relation in the UK. Furthermore, the existing academic literature appears to provide inconsistent results.

These considerations motivate this study to bridge this gap in the literature by providing evidence of whether or not EM and CSR are related in the UK. The present study carried out through three empirical stages based on the data obtained from the FTSE 350 Index between 2008 and 2010.

The first stage examined the EM practice using three EM models to estimate discretionary accruals as proxy for EM. The models were the Jones (1991), modified Jones (Dechow et al. 1995) and performance - matched (Kothari et al. 2005) models. Firstly, these models were tested using multivariate analysis; the findings revealed that the performance - matched model has been identified as the model that could most accurately measure the presence of EM. Secondly, by applying univariate analysis, the study has found insignificant differences between the high and low EM practices in UK firms and that the highest and the lowest levels of EM were in 2008. Similar results were discovered when comparing the differences between income - increasing and income - decreasing EM.

The second stage tested CSR by applying both content analysis and disclosure index approaches to identify the level of Corporate Social Responsibility Disclosure (CSD) as proxy of CSR. The findings from the content analysis revealed that the employees (EMP) theme had the highest level of CSR information, followed by community (COM), environment (ENV), others (OTH), products and services (PRO), and customers (CUS). Similar results were obtained when the disclosure index approach was employed.

The relationship between EM and CSR was tested in the final stage by using univariate and multivariate analyses. The findings revealed that firms with more CSR information reported lower EM. Further tests were performed to investigate the link between EM and CSR themes and the findings revealed that firms with more information of EMP, COM, ENV and PRO reported lower EM. However, no evidence suggested that CUS and OTH information affect EM. Overall, the findings suggest that the level of CSR improve financial reports' quality. This study aspires to contribute to our understanding and knowledge on the issue related to the role of CSR regarding the quality of reported earnings.

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## Abbreviations

$\Delta$ RCE	: Change in receivables (debtors)
$\Delta$ REV	: Change in revenues
2SLS	: Two Stage Least Square
A	: Total Accruals
AUDEF	: Audit committee effectiveness
BRDEF	: Board effectiveness
COM	: Community theme
CSD	: Corporate social responsibility disclosure
CSR	: Corporate social responsibility
CSRI	: Corporate social responsibility disclosure score
CUS	: Customer theme
e	: Error term
e.g.	: Exempli gratia (Latin: for instance)
EM	: Earnings management
EMP	: Employee theme
ENV	: Environmental theme
et al.	: et alia (Latin: and other)
GAAP	: Generally Accepted Accounting Principals
GLS	: Generalized Least Square
i	: Industry i
i.e.	: id est (Latin: that is to say)
j	: Firm j
JM	: Discretionary accruals using cross-sectional Jones model
LEVG	: Financial leverage
LOSS	: Loss
MB	: Market to book
MJM	: Discretionary accruals using cross-sectional modified Jones model
OCF	: Cash flow from operation
OLS	: Ordinary Least Square
OTH	: Others them
P50	: Median
PM	: Discretionary accruals using cross-sectional performance-adjusted model
PPT	: Gross property, plant and equipment

PRO	: Products and services theme
ROA	: Return on assets
SIZE	: Firm size
t	: Year t
TA	: Total accruals
UK	: United Kingdom
US	: United States
VIF	: The Variance Inflation Factor
$\alpha_0, \alpha_1$ and $\alpha_2$	: Estimated Parameters

# **Chapter One**

## **Introduction**

This chapter provides an introduction to this research and begins by discussing its background and justification. Section 1.2 explains the research's aim and questions. Section 1.3 presents the research methods. Section 1.4 outlines the study contribution and Section 1.5 reports the research structure.

### **1.1 Research Background and Justification**

Accounting earnings are one of the most significant components in the financial reports that can be used to convey information about a company's value to outsiders (DuCharme et al. 2004). In addition, investors can use accounting earnings to assess the company's future uncertainty with regard to its economic performance. According to the Generally Accepted Accounting Principles (GAAP), managers can use their judgement over accounting earnings to make financial reports more informative for users (Prior et al. 2008). In such a case, managers can use their knowledge to select reporting methods, estimates and disclosures that reflect the underlying economic conditions of the firm (Beneish 2001). However, when the interests between managers and shareholders conflict, the former can exercise some discretion over accounting earnings either to mislead shareholders about the firm's underlying financial performance or to gain some private benefits at the expense of other stakeholders (Healy and Wahlen 1999). This opportunistic behaviour can be

practised by managers through choosing reporting methods and estimates which do not accurately reflect the company's underlying economic conditions.

Over the last few decades, the opportunistic Earnings Management (EM) practice has become a major concern among investors, practitioners, regulators and scholars, especially since the revelations of massive accounting scandals involving large corporations (e.g. Enron, WorldCom, etc.). It has been argued that EM is more likely to reduce the financial reports' reliability and quality, their usefulness for investment decisions and the shareholders' confidence in the financial statements (Chen et al. 2010). In addition, Fombrun et al. (2000a) argue that if EM is detected by outsiders, a company loses its stakeholders' support, legal actions could be taken by regulators against the firm, the firm's products and services may be boycotted, it is likely to be deemed as illegitimate by the local community and it could be exposed by the media.

On the other hand, it has been argued that several advantages can be gained from a company's involvement in Corporate Social Responsibility (CSR) activities (Branco and Rodrigues 2006; Orlitzky et al. 2003; Gray et al. 1988). Such activities assist firms to enhance their transparency and build a positive image among the stakeholders which, in turn, help them to gain support from the society in which they operate. In the same vein, Fombrun et al. (2000b) argue that a positive image helps managers to establish social bonds between the company, its employees and the local community and generates reputational gains that improve the firm's ability to attract resources, enhance its performance and build a competitive advantage. Similarly, Branco and

Rodrigues (2006) demonstrate that, by engaging in social activities, firms can gain support from their various stakeholders and obtain more favourable regulatory treatments, endorsements from activist groups, legitimacy from the community and favourable coverage from the media. Despite the advantages of engaging in CSR, it has been argued that managers may do so to pursue their own self-interests rather than the interests of the company's stakeholders (Carroll 1979). In addition, CSR can be used as an entrenchment mechanism by managers to protect their own job security and achieve their personal objectives (Prior et al. 2008).

In terms of EM, previous studies have suggested two contradictory theoretical perspectives to explain the link between EM and CSR. These perspectives are: long-term (ethical) and managerial opportunism (opportunistic behaviour) perspectives (Choi et al. 2013). According to the long-term/ethical perspective, firms with strong commitments to CSR are less likely to manage earnings since they do not hide unfavourable earnings realisations and, therefore, conduct no EM (Chih et al. 2008). Since EM is perceived as an act of irresponsibility and is inconsistent with CSR principles, Choi et al. (2013) argue that firms with strong commitment to CSR are more prone to act in a responsible way when reporting their financial statements. Likewise, Kim et al. (2012) point out that companies that expend their efforts and resources in designing CSR programmes and implement these programmes in order to serve the ethical interests of stakeholders in society provide transparent and reliable financial reporting to their various stakeholders and are, therefore, less likely to manage earnings.



Inversely, the managerial opportunism perspective suggests that managers who manage earnings may strategically use CSR information to disguise their opportunistic behaviour (Prior et al. 2008). According to Prior et al. (2008), managers who engage in EM may resort to CSR to deal with their stakeholders' activism and vigilance. In line with this argument, Choi et al. (2013) argue that managers who act in pursuit of private benefits by distorting earnings information are able to entrench themselves through engaging in CSR activities.

Empirically, few studies have attempted to explore whether or not EM and CSR are related. However, the existing academic literature on the link between EM and CSR has provided contradictory results. For example, several studies have found that EM and CRS are negatively related (Choi et al. 2013; Pyo and Lee 2013; Kim et al. 2012; Hong and Andersen 2011; and Chih et al. 2008). They have interpreted a negative relationship between EM and CSR as that firm with strong commitment to CSR is less likely to engage in EM. On the other hand, other studies have found that EM and CSR are positively related (Jiang et al. 2013; Yip et al. 2011; Gargouri et al. 2010; Prior et al. 2008; Patten and Trompeter 2003). The positive relationship between EM and CSR indicates that firms with a higher level of EM resort to CSR activities to disguise managerial opportunistic behaviour. The contradictory results with respect to the link between EM and CSR provide the motivation to look further for evidence regarding the nature relationship between EM and CSR. Therefore, the fundamental concern of this study is to shed more light on the association

between EM and CSR and to attempt to provide empirical evidence regarding this area in accounting research.

Although EM and CSR have been investigated in previous studies in Canada (Gargouri et al. 2010); China (Jiang et al. 2013); South Korea (Choi et al. 2013; Pyo and Lee 2013); the US (Yongtae et al. 2012; Hong and Andersen 2011; Yip et al. 2011; Patten and Trompeter 2003); and multi-national datasets (Chih et al. 2008; Prior et al. 2008), the review of the literature reveals that no single study has explored this field in accounting research in the UK, apart from the study conducted by Sun et al. (2010), who addressed the link between environmental disclosure and EM for the year 2007 and found that the two variables are unrelated. This consideration provides the motivation to the present study to bridge this gap in the literature by providing evidence on the nature of the relationship between EM and CSR in the context of the UK.

It has been argued that the economic conditions affect a company's economic performance which, in turn, may motivate managers to manipulate earnings. In this regard, Berndt and Dipl-Kfm. (2011) and many other researchers have found evidence that managers practise EM during economic crises. Thus, one might expect that EM is more prevalent in a period of uncertainty during the global financial crisis in 2008 (Rolland and dirigé 2013; Berndt and Dipl-Kfm. 2011). Likewise, Rolland and dirigé (2013) argue that, during and after financial crises, managers may have had a need to manage earnings in order to increase the shareholders' confidence in the firms' financial performance. Considering

this, the present study has chosen the years between 2008 and 2010 as the study period.

## **1.2 Research Motivations**

This research is motivated by three major considerations. Firstly, opportunistic EM is more likely to produce financial information that does not reflect an accurate economic picture of the firm. Thus, it is likely to reduce the quality of reported earnings and its usefulness for shareholders decisions, which in turn, reducing shareholders confidence in the financial reports. However, accounting earnings are more reliable and of higher quality when managers' opportunistic behaviour is reduced by monitoring systems Dechow et al. (1996). Hence, EM has received much more attention among investors, practitioners, regulators and scholars, especially after the collapse of several large firms in last few decades and they have responded by enhancing corporate governance and disclosure as monitoring tools. Therefore, without appropriate monitoring system, the separation of ownership and control of a company might create serious problems.

One important monitoring system that can be used by investors and regulators is corporate disclosure and its main aim is to reduce information asymmetry between managers and investors, which in turn, reducing the agency problem (Huang and Zhang 2011). In this regard, Eng and Mak (2003) state that disclosure is recognised as one of corporate monitoring system that its objective is to reduce the agency problem since well-informed investors are expected to scrutinise firms based on the information provided to them, and this

subsequently reduces the agency costs. In addition, Sun et al. (2010) indicate that companies can use different methods such as disclosure to reduce the conflict of interests between managers and investors.

Given that that financial transparency and accountability are vital principles of CSR (Chih et al. 2008), EM is expected to occur less in companies that disclose more information on their social activities. In other words, when the information transparency is increased, it is expected that the information asymmetry between managers and investors will be decreased, which will enable investors to detect EM (Jo and Kim 2007). Inversely, EM is more likely to be occurred in those companies with limited or low levels of CSR, as a result of which information asymmetry is expected to be high (Jo and Kim 2007). Therefore, the present study has a strong incentive to shed more light on the potential impact of CSR on EM.

Secondly, a review of the literature reveals a scarcity of research regarding to the phenomenon of EM and CSR. This review also shows that most of the prior studies relating to this area of research have been conducted in the US and there is no single study has been conducted in the UK. This offers different institutional settings from UK market and thus limits the generality of their findings for contexts beyond the US. Although the UK and the US share some common features, there are differences in many ways that could affect the inferences of such research (Toms and Wright 2005). For example, US companies are required to disclose more detailed information about corporate social activities and corporate governance than are UK firms (Lennox 2003).

Moreover, UK companies are subject to different corporate governance recommendations and listing requirements. Another area of divergence is the notion of EM practice. In this regard, Brown and Higgins (2001) indicate that the extent to which US managers manage earnings is significantly higher than by their counterparts in the UK. For these considerations, the current study is motivated to examine the link between EM and CSR in the context of the UK.

Furthermore, a review of the EM literature reveals a scarcity of research relating to EM in the UK and there are very few studies that have examined UK companies (Habbash 2010). In addition, Habbash (2010) indicates that the existing few UK studies have some methodological limitations, such as using misspecified EM and neglecting some fundamental control variables, such as performance and growth. Therefore, a comprehensive study that considers the limitations of previous studies is needed to improve EM research in the UK.

Thirdly, as discussed earlier, a limited research has been conducted on the link between EM and CSR. Thus, it is expected that this study sheds more lights on how CSR extends to other aspects of corporate behaviour, in this case, financial reporting quality and transparency.

### **1.3 Research Question and Objectives**

The primary focus of this research is to answer the main question: “Is there a relationship between the magnitude of EM and the level of CSR in the UK? This will be addressed through three empirical stages. The first stage examines EM in

UK companies, while the second stage investigates CSR in UK firms. The final stage tests the link between EM and CSR.

To address the research primary question, the three empirical objectives are formulated. The first objective is to identify which of the existing EM models is most suitable for measuring EM practices in the UK. This is achieved by reviewing the use of different models in assessing EM. This study reviews and critically evaluates three different models, namely the Jones (1991), modified Jones (Dechow et al. 1995), and the performance - matched (Kothari et al. 2005). These models are applied in the previous studies. In addition and under the first objective, the level and the direction of reported earnings is also exploring. The second objective is to investigate the total and sub-themes levels of CSR. This objective is tested using alternative measurements such as content analysis and disclosure index. The third objective is to investigate whether or not discretionary accruals (as proxy for EM) and Corporate Social Responsibility disclosure (CSD) (as proxy for CSR) are linked in the context of the UK.

#### **1.4 Research Methods**

This section presents a brief summary of the research methods used in this study. A detailed specification of the methods, including the justification for the selection of the research methodology and methods is provided in Chapter Four. Considering the first research objective, which is addressed in Chapter Five, the three most common EM models in EM literature were tested to identify which one is the most powerful in detecting EM in terms of the study

data<sup>1</sup>. These models were the Jones (1991), modified Jones (Dechow et al. 1995), and the performance - matched (Kothari et al. 2005) models. In addition to using multivariate analysis, the study has employed univariate analysis based on the t-test to determine whether the level and the direction of EM are different from zero. The FAME and Thomson One Banker databases were used as the main sources from which to collect EM data for a sample of 515 listed in FTSE 305 Index year-observations during the fiscal years of 2008 to 2010.

Like the previous studies of Hassan and Harahap (2010); and Haniffa and Cooke (2005), the second research objective has been addressed through using both content analysis and disclosure index methods to capture the level of CSR. With respect to content analysis, following previous studies (Aribi and Gao 2010; Haniffa and Cooke 2005), the number of words was applied to gather the level of CSR from firms' annual reports and CSR reports, if available during the period 2008-2010. Since content analysis cannot capture pictures and graphics, which are potentially powerful and highly effective methods of communication (Haniffa and Cooke 2005), it was decided that using both content analysis and disclosure index would be an effective way of capturing all the CSR information. Therefore, following Haniffa and Cooke (2005) and many other studies, disclosure index has also been used in the present study to measure the level of CSR in UK firms' annual reports and CSR reports. The second question is addressed in Chapter Six.

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<sup>1</sup> The ordinary least squares (OLS) were applied in the three models to explain the relationship between the dependent variable and the various independent variables.

In order to address the third research objective, both univariate and multivariate analyses have been conducted to explore whether or not EM and CSR are linked. The univariate analysis has been applied using a correlation matrix, t-test and Mann-Whitney U test for the dependent (EM), independent (CSR) and control variables. These tests have been applied to provide the general statistical characteristics and the relationships between the variables. In addition to conducting univariate analysis, this study has employed multivariate analysis using multiple pooled regression analysis to test the relation between EM and CSR.

In addition to the use of univariate and multivariate analyses, the present study applied the multi-methods approach to test the association between EM and CSR. This statistical approach involves the use of the multiple pooled data of 515 year-observations of firms in the UK FTSE 350 Index from the period stretching from 2008 to 2010. This involves the use of OLS regression with robust standard errors (Huber-White standard errors) to test whether or not the findings on EM and CSR are robust with different regression estimators. It also involves the use of two-stage least square regression (2SLS) to control endogeneity and to test whether or not the findings on EM and CSR are affected by the problem of endogeneity between EM and CSR variables. Furthermore, the multi - methods approach involves the use of different proxies for EM and CSR. Regarding EM, discretionary accruals using the performance - matched (Kothari et al. 2005) model has been used in the main analysis, while for the sensitivity analysis the modified Jones (Dechow et al. 1995) model has been



applied as an alternative measurement of EM. In respect of CSR, the total level score of CSR has been used as the primary measurement of CSR, while in the sensitivity analysis the total number of words has been employed as an alternative measurement of CSR.

## **1.5 The Contribution of the Study**

This thesis represents a comprehensive study of EM and CSR, specifically in the UK market. Using the current data of the FTSE 350 Index firms for the fiscal years from 2008 to 2010, the first empirical stage of the thesis has investigated EM practices. The second stage has examined the level of CSR information, whilst the third empirical stage has tested the link between EM and CSR. Several contributions to knowledge are made through this research. Firstly, very limited research has addressed the relationship between EM and CSR, therefore this study highlights that issue such as financial transparency and accountability can induce managers to produce high quality financial reports. This is a new and far-reaching addition to EM literature. In addition, it sheds more lights on how CSR extends to other aspects of corporate behaviour such as financial reporting transparency and quality.

Secondly, as stated in the motivations for the study, previous research in this area has predominantly been undertaken in the US and, to the best of the researcher's knowledge, no study has been conducted in the UK. This offers a different litigation environment, institutional setting and disclosure requirements, thus limits the generalizability of the findings to other countries.

Therefore, the investigation of UK firms expands the existing literature by providing evidence on the link between EM and CSR in UK context.

Thirdly, prior research has used CSR score to investigate the link between EM and CSR, and, to the best of author's knowledge, no study has used multiple proxies for CSR. The present study is the first to use alternative measurements (content analysis and disclosure index) to estimate CSR with the aim of providing a better and deeper understanding of the nature of the relationship between EM and CSR. In addition, using multiple proxies approach enhances the validity and reliability of the study findings.

## **1.6 The Structure of the Thesis**

This thesis, including the introductory chapter, consists of eight chapters. The current chapter has provided an overview of the research study background, outlined the study's aim and questions and briefly discussed the methods to be used. Chapter Two provides a general review of the literature on EM. It discusses the definition, motivation and techniques of EM. The chapter also presents a review of the approaches and models used in the literature to detect EM. This thesis has adopted the aggregate EM approach to measure EM using the three most common models in the literature to estimate discretionary accruals as a proxy of EM. These models are the Jones (1991), the modified Jones (Dechow et al. 1995), and the performance-matched (Kothari et al. 2005) models.

Chapter Three presents a review of the literature on CSR and CSD. It presents the debate on the concept and definition of CSR and also discusses the importance of practising CSR activities as well as the link between CSR and CSD. It then set outs definitions and various theories to not only explain why firms engage in CSR activities but also to provide an understanding of how CSR information can be linked to EM practices.

Chapter Four outlines the methods used to measure the study's dependent (EM), independent (CSR) and control variables. The present chapter discusses and justifies the study sample, data sources and the research period. It then outlines the measurements of dependent, independent and control variables and explains the empirical research models and hypotheses used to test the link between EM and CSR information. The analytical procedures and choice of analytical methods are illustrated and justified in this chapter.

Chapter Five presents and discusses the results regarding the EM practices in UK companies. It starts with descriptive statistics of all the variables used to detect EM and then presents the results by comparing the EM models' findings (i.e. the Jones, the modified Jones and the performance-matched models). Finally, the chapter presents the results pertinent to the compression of the level and the direction of EM.

Chapter Six provides the findings related to the total level and sub-themes of CSR. It starts with the general findings regarding the total level and sub-themes of CSR based on the number of companies and then presents the findings from

the content analysis approach in terms of the number of words for the total and sub -themes of CSR. Then, using disclosure index, it provides the descriptive statistics for the findings on total level and sub-scores of CSR. Lastly, it presents the total level and sub-themes of CSR in different industries using both content analysis and disclosure index approaches.

Chapter Seven reports and discusses the study's results as to the association between EM and CSR. It begins with descriptive statistics, correlations, and multivariate analysis results. This is followed by the presentation of the results of the tested models and those drawn from hypotheses-testing. Further analyses and sensitivity analyses are also presented in this chapter to check the robustness of the main results

Chapter Eight concludes with an overview of the study, summarises the main findings of the research, highlights the study's implications, explains its limitations and provides suggestions for future research.

## **Chapter Two**

### **Earnings Management: Literature Review**

#### **2.1 Introduction**

Under the accruals accounting system, there are many ways in which managers might exercise their judgement in preparing financial reports. The flexibility of accounting standards allows managers to estimate accounting numbers that reflect the actual underlying economic conditions of a firm. However, when the interests of managers and shareholders conflict, managers may use some discretion over earnings reporting without violating GAAP either to mislead some shareholders about the firm's underlying financial performance or to gain some private benefit at the expense of other stakeholders (Healy and Wahlen 1999). This chapter aims to provide a general review of the literature on EM. The remainder of the chapter is structured as follows. Section 2.2 presents a review of EM definitions. The motivation and techniques of EM are presented in sections 2.3 and 2.4 respectively. Section 2.5 discusses EM measurements. Section 2.6 presents a summary of this chapter.

#### **2.2 EM Definitions**

Although the term 'earnings management' is widely used in the literature, there is no consensus on its definition. Healy and Wahlen (1999) define EM as follows: "earnings management occurs when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to

influence contractual outcomes that depend on reported accounting numbers” (p.368).

Another definition suggests that EM is “the process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about a desired level of reported earnings.” (Davidson et al. 1987: cited in Schipper 1989, p.92). Similarly, Schipper (1989) defines EM as “a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain” (p.92).

Although the key concept in the above definitions is the notion that managers practise EM to either mislead some stakeholders about the firm’s underlying financial performance or to maximise their own private gains within the firm, Beneish (2001) states that there are two perspectives of EM: opportunistic EM and informative EM. While opportunistic EM seeks either to mislead investors or to secure managers’ jobs, reputations, and compensation within the firm, the informative EM aims to provide private information to the investors about the firm’s future performance. In line with Beneish’s argument, Fields et al. (2001) indicate that managerial discretion can be either firm value maximisation or opportunistic behaviour. Furthermore, Parfet (2000) argues that EM is not entirely a bad thing if reasonable and proper practices of EM are used in a well-managed business and deliver value to shareholders.

Dechow and Skinner (2000) criticise the above definitions for failing to clearly distinguish between ‘EM’ and ‘fraud’ and indicate that EM falls within the GAAP, while fraud violates the GAAP (see Figure 2.1). Dechow and Skinner acknowledge that there is only a fine line between the two concepts and, in the case of aggressive

accounting, it is difficult to differentiate between opportunistic EM and legitimate practices of accounting discretion without identifying the managerial intent to manipulate earnings.

According to the above discussion, all the definitions indicate implicitly or explicitly that managers practise EM in two main ways: accounting choice and discretionary accruals. While accounting choice includes, for example, revenue recognition methods, inventory cost calculation, and research and development expenditure (R&D), discretionary accruals includes provisions for dubious accounts, provisions for obsolete inventories, deferred tax assets, and variation in the useful economic life of depreciated long-term assets (e.g. Bauman et al. 2001; Guidry et al. 1999; McNichols and Wilson 1988). In addition, managers can, to some extent, alter the timing of real decisions such as recognition of revenues and expenses by, for instance, accelerating recognised sales revenue via credit sales or delaying recognised losses by waiting to establish loss reserves.

Another aspect of the above definitions is that the word 'mislead' in Healy and Wahlen (1999) definition precludes any form of informative EM practice, while the definition by Beneish (2001) indicates that EM occurs when managers seek to either mislead stakeholder perception or to provide private information about the firm's future performance. Therefore, it is important to identify managers' intent in order to determine whether EM is opportunistic behaviour or informative exercise. Hence, many attempts have been made in the previous literature to identify various motivations to manage earnings.

**Figure 2-1: The Distinction between EM and Fraudulent Financial Reporting**

	<u>Accounting Choices</u>	<u>"Real" Cash Flow Choices</u>
	<u>Within GAAP</u>	
"Conservative" Accounting	<ul style="list-style-type: none"> <li>- Overly aggressive recognition of provisions or reserves.</li> <li>- Overvaluation of acquired in-process R&amp;D in purchase acquisitions.</li> <li>- Overstatement of restructuring charges and asset write-offs.</li> </ul>	<ul style="list-style-type: none"> <li>- Delaying sales.</li> <li>- Accelerating R&amp;D or advertising expenditures.</li> </ul>
"Neutral" Accounting	<ul style="list-style-type: none"> <li>- Earnings that result from a neutral operation of the process.</li> </ul>	
"Aggressive" Accounting	<ul style="list-style-type: none"> <li>- Understatement of the provision for bad debts.</li> <li>- Drawing down provisions or reserves in an overly aggressive manner.</li> </ul>	<ul style="list-style-type: none"> <li>- Postponing R&amp;D or advertising expenditures.</li> <li>- Accelerating sales.</li> </ul>
	<u>Violates GAAP</u>	
"Fraudulent" Accounting	<ul style="list-style-type: none"> <li>- Recording sales before they are "realizable".</li> <li>- Recording fictitious sales.</li> <li>- Backdating sales invoices.</li> <li>- Overstating inventory by recording fictitious inventory.</li> </ul>	

Source: Dechow and Skinner (2000, p. 239).



## **2.3 EM Techniques**

### **2.3.1 Income-Smoothing Technique**

According to Barnea et al. (1976), income-smoothing is “the deliberate damping of fluctuations about some level of earnings considered to be normal for the firm” (p. 111). This technique is a frequent form of EM because of its compatibility with several earnings objectives and it is used to reduce the variance in earnings over the years. Thus, managers might engage in income-decreasing EM when a firm seeks to defer excess incomes in profitable years to increase incomes in loss-making years. For example, managers may set high levels of provision for dubious debts and depreciations in profitable years, reversing them in loss-making years. This technique is known as “cookie jar” reserves because excessive provisions are recorded like cookies saved in a jar and are ready for use at the desire of the managers (Musfiquir Rahman et al. 2013).

Conversely, when the current year’s profits are lower than the previous year’s earnings or the results for the current year are negative, managers may manage earnings upwards by engaging in aggressive income recognition in the current year or delay expenses to the following year. For example, managers may record assets for expenditures that should be met as they are incurred, such as research and development (R&D) expenditures (Stolowy and Breton 2004).

### **2.3.2 Big Bath Technique**

This technique is used when a company’s current income is unable to meet earnings targets or when a company suffers from substantial losses it is unable to recover; hence, the company reduces the level of current earnings in order to increase the

level of future earnings. According to Healy (1985), managers save the current earnings through income-decreasing EM when they realise that earnings are lower than the future bonus plan. In addition, when the bonus plan has already been reached, managers manage earnings downwards for use in the following year. Furthermore, when a company's current earnings are negative and it is unable to meet earnings targets, it engages in income-decreasing for use in the following year(s). Similarly, McNichols and Wilson (1988) find that managers manipulate earnings by recording future expenses in the current year when they realise that current earnings are insufficient to meet earnings targets.

Moore (1973) argues that new managements tend to engage more in income-decreasing in their first year to improve reported earnings in the future than do their counterparts with no management turnover. In a similar vein, Pourciau (1993) indicates that new CEOs may tend to engage in income-decreasing EM in their first year.

### **2.3.3 Accounting Choices**

Under accounting standards, managers have alternative accounting choices for estimating one accounting practice. In this regard, Nelson et al. (2002) state that EM can be practised through various techniques such as revenue recognition, business combinations, intangibles, fixed assets, investments and leases, a frequently-employed technique.

With respect to inventory-estimated methods, it is argued that managers prefer to use first-in first-out (FIFO) to measure inventory cost when they want to show higher earnings. In contrast, they prefer to apply last-in first-out (LIFO) when they want to

show lower earnings. In this respect, Sweeney (1994) finds that companies switch between inventory cost methods to manipulate earnings when they are in danger of loan default. Likewise, Aljifri (2007) finds that FIFO and LIFO are the most common methods of inventory cost methods for manipulating inventory and indicates that managers may use FIFO when they want to increase earnings, particularly when the price goes up. Furthermore, Aljifri argues that changes in accounting methods, such as a change from FIFO to LIFO or vice versa, are expensive, observable, and more easily detected by external auditors.

Another accounting choice available for managers is depreciation methods (i.e. the straight-line method, sum-of-the-years' digits method, and double-declining balance method). While the straight-line method offers an equal amount of annual depreciation expense, the sum-of-the-years' digits, and double-declining balance methods present the highest amount of depreciation (lower income) in the first year and lowest depreciation (higher income) in the last year of asset life. Hence, managers may adopt or change depreciation methods to meet their earnings objectives. Furthermore, managers may adopt deferred tax to improve their earnings. They may also capitalise expenditure to defer expenses in the current year.

As can be seen from the above, there are many techniques available for managers to manage earnings and it appears difficult for outside investors to observe it. Therefore, a significant number of EM studies have been conducted to detect EM. The next section will discuss the measurement of EM.

## 2.4 Measurement of EM

Using statistical techniques, a significant number of EM studies have attempted to measure EM. In general, three main approaches have been used in the literature to detect EM: aggregate accruals approach (Kothari et al. 2005; DuCharme et al. 2001; Kothari 2001; Erickson and Wang 1999; DeFond and Subramanyam 1998; Han and Shiing-Wu 1998; Dechow et al. 1995; Jones 1991; DeAngelo 1986; Healy 1985); specific accruals approach (Beaver and McNichols 1998; Beneish 1997; Beaver and Engel 1996; Petroni 1992; McNichols and Wilson 1988); and frequency distribution of earnings approach (Degeorge et al. 1999; Burgstahler and Dichev 1997). The following sections will briefly discuss each of these approaches.

### 2.4.1 Aggregate Accruals Approach

The aggregate approach is extensively used in the literature for measuring EM. Since the aggregate accruals consist of discretionary and non-discretionary accruals, the main difficulty faced by EM models is the identification and separation of the total accruals into the two components<sup>2</sup>. Therefore, several models have been introduced in the literature. These models range from simple models, in which the perceived change in aggregate accruals is used as a measurement of EM, to the more sophisticated models, in which total accruals are partitioned into discretionary accruals and non-discretionary accruals. The following subsections discuss the most popular models in the aggregate approach.

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<sup>2</sup> Discretionary accruals are adjustments selected by firm' managers, while non-discretionary accruals are adjustments mandated by accounting standards.

#### 2.4.1.1 The Healy (1985) Model

Healy (1985) estimates discretionary accruals using total accruals scaled by lagged total assets in the estimated period. Healy measures total accruals as the difference between reported earnings and cash flow from operations. Healy's implicit assumption is that, in the absence of EM, the expected total accruals will be zero in the estimation period. In addition, although Healy states that total accruals include discretionary and non-discretionary accruals, he does not separate discretionary accruals from non-discretionary accruals. The study argues that systematic EM occurs in every period. The Healy (1985) model is presented as follows:

$$EDA_{it} = TA_{it}/A_{it-1} \quad [2.1]$$

Where

- $EDA_{it}$  : Estimated discretionary accruals for firm  $i$  in year  $t$ ;
- $TA_{it}$  : Total accruals, defined as the difference between reported earnings and operating cash;
- $A_{it-1}$  : Lagged total assets at beginning of year.

The underlying assumption of Healy's model that the level of non-discretionary accruals is zero during the estimation period has been criticised for several reasons. First, the level of non-discretionary accruals is not expected to be zero in any given period because it fluctuates depending on the firm's economic circumstances (Kaplan 1985). Second, due to the impact of the depreciation expenditure, the level of total accruals as non-discretionary accruals is more likely to be negative for many firms (Perry and Williams 1994).

#### 2.4.1.2 The DeAngelo (1986) Model

DeAngelo (1986) assumes that the difference between current and previous years' accruals is due to changes in discretionary accruals, since non-discretionary accruals

may be constant over time. In order to test this assumption, DeAngelo defines total accruals as the sum of discretionary and non-discretionary accruals and calculates total accruals as the difference between net income and cash flow from operations. This model uses the last period's total accruals scaled by lagged total assets as the measure of non-discretionary accruals, as follows:

$$EDA_{it} = (TA_{it} - TA_{it-1})/A_{it-1} \quad [2.2]$$

Where

- $EDA_{it}$  : Estimated non-discretionary accruals for firm  $i$  in year  $t$ . measured as the difference between total accruals in the event year and total accruals in the estimated year
- $TA_{it}$  : Total accruals, defined as the difference between net income and operating cash;
- $A_{it-1}$  : Lagged total assets at beginning of year.

DeAngelo (1986) model presumes that non-discretionary accruals follow a random walk and that the change in non-discretionary accruals is constant over time and is therefore approximately zero; however, it has been criticised by several EM researchers (see Section 2.5.1.1).

Although the DeAngelo (1986); and Healy (1985) models are the simplest, they are also the most restrictive models for estimating discretionary accruals because they ignore the fact that non-discretionary accruals fluctuate with the firm's economic circumstances (Kaplan 1985).

#### **2.4.1.3 The Industry (Dechow and Sloan 1991) Model**

Dechow and Sloan (1991) introduce the Industry model to capture EM. Due to the limitations of the DeAngelo (1986); and Healy (1985) models in that non-discretionary accruals are constant over time, Dechow and Sloan (1991) assume that the variations in non-discretionary accruals are common across firms in the same

industry. Based on this assumption, Dechow and Sloan (1991) suggest that non-discretionary accruals are equal to the median value of total accruals in year  $t$  scaled by lagged total assets for all non-sample firms in the same industry  $j$ . Therefore, non-discretionary accruals are measured as follows:

$$\mathbf{NDA}_{it} = \alpha_{1it} + \alpha_{2it} \mathbf{Median}_j (\mathbf{TA}_{it-1}) / \mathbf{A}_{it-1} \quad [2.3]$$

Where

- $\mathbf{NDA}_{it}$  : Non-discretionary accruals for firm  $i$  in year  $t$ . measured as the difference between total accruals in the event year and total accruals in the estimated year
- $\mathbf{Median}_j (\mathbf{TA}_{it-1}) / \mathbf{A}_{it-1}$  : Median value of total accruals industry  $j$ , firm  $i$ , in year  $t$  scaled by lagged total assets;
- $\mathbf{TA}_{it}$  : Total accruals, defined as the difference between net income and operating cash;
- $\mathbf{A}_{it-1}$  : Lagged total assets at beginning of year.
- $\alpha_{1it}$  and  $\alpha_{2it}$  : Firm-specific parameters as estimated by using Ordinary Least Squares (OLS) on observations in the estimated period

Although the Industry (Dechow and Sloan 1991) model attempts to overcome the limitations of the DeAngelo (1986); and Healy (1985) models, it has two limitations. First, it removes the variation in non-discretionary accruals that is common in the same industry. Therefore, if changes in non-discretionary accruals reflect responses to changes in the firm's economic circumstances, then using this model may misclassify non-discretionary accruals as discretionary accruals. Second, it removes the variation in discretionary accruals that is correlated across firms in the same industry; thus, the model may misallocate discretionary accruals as non-discretionary accruals (Dechow et al. 1995),

#### 2.4.1.4 The Jones (1991) Model

Based on the assumption that total accruals are likely to result from managerial discretion and from changes in a firm's economic conditions (Kaplan 1985), Jones (1991) proposes a regression-based model that controls for change in revenue and depreciation. Jones uses a two-stage producer to estimate discretionary accruals. In the first stage, Jones relates total accruals (TA) to the change in revenue ( $\Delta REV$ ) and gross property, plant, and equipment (PPT) using time-series data prior to the event period  $t$  as follows:

$$TA_{it}/A_{it-1} = \alpha_1 (1/A_{it-1}) + \alpha_2 (\Delta REV_{it}/A_{it-1}) + \alpha_3 (PPT_{it}/A_{it-1}) \quad [2.4]$$

Where

$TA_{it}$	:	Total accruals for firm $i$ in year $t$ .
$\Delta REV_{it}$	:	Change in revenues for firm $i$ in year $t$ .
$PPT_{it}$	:	Gross property, plant and equipment for firm $i$ in year $t$ .
$A_{it-1}$	:	Lagged total assets at beginning of year.
$\alpha_1, \alpha_2$ , and $\alpha_3$	:	Firm-specific parameters.

In the second stage of estimating discretionary accruals, the parameters  $\alpha_1, \alpha_2$ , and  $\alpha_3$  from equation (2.4) are applied to data from the event year  $t$  to estimate discretionary (DA) accruals as follows:

$$DA_{it} = [(TA_{it})/A_{it-1}] - [\alpha_1 (1/A_{it-1}) + \alpha_2 (\Delta REV_{it}/A_{it-1}) + \alpha_3 (PPT_{it}/A_{it-1})] \quad [2.5]$$

Where

$DA_{it}$	:	Discretionary accruals for firm $i$ in period $t$ .
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The Jones (1991) model includes changes in revenue and gross property, plant and equipment to control for a firm's economic conditions and depreciation respectively. However, controlling for change in revenue assumes that the revenue is non-discretionary accruals. Given that revenue may be subject to earnings manipulation



by managers (e.g. increasing sales recognition near year-end period), using the Jones model will remove part of discretionary accruals. Jones (1991, p.212) recognised this limitation in her model and acknowledged that revenues, to some extent, may be affected by managers' manipulation.

#### 2.4.1.5 The Modified Jones (Dechow et al. 1995) Model

In response to the limitation of the Jones model, which assumes that revenue is non-discretionary accruals, Dechow et al. (1995) developed a modified version of the Jones model by subtracting the change in receivables ( $\Delta REC$ ) from change in revenues ( $\Delta REV$ ) to exclude the element in the change in revenue that is expected to be managed through managerial discretion. The modified Jones model uses the estimated coefficients of equation (2.4) in the following equation:

$$DA_{it} = [(TA_{it})/A_{it-1}] - [\alpha_1(1/A_{it-1}) + \alpha_2(\Delta REV_{it}/A_{it-1} - \Delta REC_{it}/A_{it}) + \alpha_3(PPT_{it}/A_{it-1})] \quad [2.6]$$

Where

$DA_{it}$  : Discretionary accruals for firm i in period t.

$\Delta REC_{it}$  : Change in receivables (debtors) for firm i, in year t.

The modified Jones model assumes that the change in receivables in the event period is entirely discretionary accruals because it is the result of managers' discretion, and that it is easier for managers to practise their estimation over the recognition of credit sales than of cash sales. However, the assumption that the entire change in receivables in the period is discretionary accruals overestimates these accruals to the extent that the change in receivables results from a firm's economic circumstances.

It is worth mentioning that the Jones model (i.e. equation 2.4) was originally introduced in a time-series approach which in turn requires a long time-series of data sitting (e.g. at least 8-10 years) to produce efficient estimator coefficients. However, using a time-series approach has several limitations. First, a time-series approach raises the potential of survivorship bias problems (Peasnell et al. 2000a; DeFond and Jiambalvo 1994). Second, it may result in specification problems in the form of serially correlated residuals (Peasnell et al. 2000b). To avoid these limitations, DeFond and Jiambalvo (1994) use the cross-sectional version of the Jones (1991) model by estimating the equation 2.4 ('stage one') for each industry on a year-specific rather than a firm-specific basis and then the estimator coefficients to predict discretionary accruals for each firm through equation 2.5 ('stage two'). Recently, a significant number of EM studies have favoured the cross-sectional approach over the time-series approach to avoid the limitations inherent in the time-series approach (Cohen and Zarowin 2010; Sun and Rath 2010; Iqbala et al. 2009; Chen et al. 2008; Abdul Rashidah and Ali 2006; Bergstresser and Philippon 2006; Xie et al. 2003; Kothari 2001; Teoh et al. 1998a; Teoh et al. 1998b).

#### **2.4.1.6 The Performance-Matched (Kothari et al. 2005) Model**

Kothari et al. (2005); and Dechow et al. (1995) evaluate the specification and power of the cross-sectional version of the Jones (1991) model based on both one-year and multiple-years measurements. The findings of the two studies are similar and reveal that the misspecifications of tests of the two models (i.e. one year and multiple years) is more extreme, specifically for firms with either higher book-to-market ratio or lower sales growth. In addition, they find that financial performance (measured as

return on assets (ROA)) is positively and significantly related to discretionary accruals, suggesting that the Jones models do not control for the firm's economic conditions. To overcome this limitation, Kothari et al. (2005) suggest an extension to the modified Jones model by incorporating ROA as a control for the firm's financial performance. According to Kothari et al. (2005) model, discretionary accruals are estimated as the residuals of the following regression equation:

$$TA_{it}/A_{it-1} = \alpha_1 (1/A_{it-1}) + \alpha_2 (\Delta REV_{it}/A_{it-1} - \Delta REC_{it}/A_{it}) + \alpha_3 (PPT_{it}/A_{it-1}) + \alpha_4 ROA_{it-1} \quad [2.7]$$

Where

- $TA_{it}$  : Total accruals for firm i in year t.
- $\Delta REV_{it}$  : Change in revenues for firm i in year t.
- $\Delta REC_{it}$  : Change in receivables (debtors) for firm i, in year t.
- $PPT_{it}$  : Gross property, plant and equipment for firm i in year t.
- $ROA_{it-1}$  : Lagged return on assets for firm i, in year t.
- $A_{it-1}$  : Lagged total assets at beginning of year.
- $\alpha_1, \alpha_2, \alpha_3, \text{ and } \alpha_4$  : Firm-specific parameters.

#### 2.4.2 The Specific Accruals Approach

It has been observed that EM researchers rely on total accruals models rather than the specific-accruals approach to detect EM (Beneish 2001). This deficiency leads Healy and Wahlen (1999) to call for further research in the area of specific accruals. They point out that, "Overall, there is remarkably little evidence on EM using specific accruals, suggesting that this is likely to be a fruitful area for future research. By examining specific accruals, researchers can provide direct evidence for standard setters of areas where standards work well and where there may be room for improvement" (p. 372). Likewise, Beneish (2001) states that the difficulties faced by total accruals models suggest that specific-accruals studies are needed.

In general, two types of specific-accruals models have been tested in the previous literature: a single specific accrual and multiple specific accruals. Based on the single specific-accrual approach, McNichols and Wilson (1988) use the provision for bad debts rather than total accruals and then use the residuals as a proxy for discretionary accruals. They find that firms with unusually low earnings prefer to engage in income-decreasing EM, indicating that this behaviour is consistent with the big bath strategy. Other studies investigate other single specific-accruals approaches, such as loan loss provisions in the banks (Beaver and Engel 1996), and claim loss reserves in insurance companies (Petroni et al. 2000; Petroni 1992).

In respect of multiple specific accruals, Beneish (1997), for example, introduces a model to detect EM among companies experiencing extreme financial performance. The model includes variables such as capital structure, prior market performance, ownership structure, sales growth, time listed, and other incentives for managers to violate GAAP. The study finds a systematic relationship between the likelihood of violating GAAP and the variables (e.g. capital structure, prior market performance, sales growth) that are used as proxies for motivations to manipulate earnings.

Although the specific-accruals approach has some advantages in estimating discretionary accruals in certain circumstances, it fails to estimate it in most circumstances (McNichols and Wilson 1988). In addition, the specific-accruals approach is insufficiently flexible for the investigation of additional variables such as corporate governance. Hence, for a researcher aiming to explore the association between EM and other hypothesised factors, the specific-accruals approach is meaningless because it requires a separate model for each specific accrual, which is

more likely to be influenced by the hypothesised factors. Furthermore, Beneish (2001) suggests that the number of companies for which a specific accrual is managed may be small relative to the number of companies with aggregate accruals, which in turn may result in limitations in the findings of specific-accruals studies.

### **2.4.3 Frequency Distribution Approach**

Unlike the other previous approaches that attempt to measure EM through the use of discretionary accruals, the distribution approach is based on the conception that managers have motivations to meet specific earnings benchmarks such as avoiding losses and decreased earnings. Therefore, it tests the distribution of reported earnings around such earnings thresholds to identify whether the incidences above and below the thresholds are distributed smoothly or reflect discontinuities due to managerial discretion.

The study by Burgstahler and Dichev (1997) was the first to use the distribution of earnings and earnings changes to measure whether managers engage in EM to avoid loss and earnings decreases, respectively. EM to avoid losses is reflected in the forms of unusually low frequencies of small losses and unusually high frequencies of small profits. Likewise, avoiding earnings decreases is reflected in the forms of unusually low frequencies of small earnings decreases and unusually high frequencies of small earnings increases. The study findings reveal that firms with small pre-managed earnings decreases engage in income-increasing to report earnings increases, and firms with slightly negative pre-managed earnings engage in income-increasing to report positive earnings. Furthermore, it finds that cash flow from operations and changes in working capital are the primary tools for managing earnings.

Similarly, Degeorge et al. (1999) use distribution of earnings per share to test whether avoiding loss, sustaining recent performance, and meeting analysts' forecasts motivate managers to manage earnings. The findings of their study reveal that the most important threshold motivating managers to manage earnings is the wish to avoid reporting losses; the second is to report profits at least equal to previous profits, and the third is to meet analysts' expectations.

Likewise, Beatty et al. (1999) use the distribution approach to investigate incentives in terms of whether the desire to avoid earnings decreases motivates managers in public and private banks to engage in EM. They find that public banks report much smaller earnings increases and much smaller decreases than expected; however, there is only weak evidence that private banks report fewer small decreases in earnings than expected. In addition, they find that public banks report more small decreases in earnings than private banks, even after controlling for differences in the operations between the public and private banks (i.e., bank size, asset growth, cash flows, loan characteristics, and geographic regions). Their study finds that public banks may use loan provisions and realised security gains and losses for increasing reported earnings. Overall, they point out that the public banks have stronger motivations to manipulate earnings than private banks do.

However, Durtschi and Easton (2005) criticise the approach of discontinuity around zero and the shapes of frequency distributions on which researchers rely as evidence of EM, and claim that these shapes are affected by deflation, sample selection criteria and/or differences between the characteristics of observations to the right and to the left of zero. They conclude that the shapes of distribution patterns are not

sufficient evidence of EM; therefore researchers must rule out these confounding factors before using the shapes of earnings distributions around zero as evidence of EM. In addition, Durtschi and Easton (2005) argue that there is no evidence to support the notion that the pervasive discontinuity of discretionary accruals at zero is due to the practice of EM.

Based on the above discussion, it can be concluded that the total-accruals approach seems to have significant advantages over the other two approaches for detecting EM. These advantages may explain why a large number of EM studies rely upon total-accruals models to measure EM. Therefore, the present study will use the total-accruals approach to estimate discretionary accruals as a proxy for EM.

## 2.5 Summary

EM represents reported earnings that reflect opportunistic managerial behaviour rather than the underlying economic circumstances of the company. The incentives that induce managers to manage reported earnings include income-increasing and income-decreasing EM motivations. To achieve earnings targets, managers may use several accounting techniques without violating the GAAP; these techniques allow managers to choose alternative accounting methods to estimate the firm's performance during a given period. Hence, alternative approaches and models are introduced in the literature to measure EM. Although total-accruals models, specific-accruals models, and the frequency distribution approach are used as alternative approaches, the total-accruals approach is the most widely-used approach in the literature because it attempts to capture the total effect of accruals on earnings. The models under the aggregate accruals approach are based on classifying the total accruals into two components: discretionary and non-discretionary accruals. While non-discretionary accruals are adjustments mandated by accounting standards, discretionary accruals are adjustments selected by managers. Although there are several suggested models for measuring EM, the most common models used by previous studies are the Jones, modified Jones, and performance-matched models. Therefore, the present study will compare the findings of these three models in order to determine the most powerful one; this will be used as the primary model for investigating the association between EM and CSR.



## Chapter Three

### Corporate Social Responsibility: Literature Review

#### 3.1 Introduction

This chapter presents a review of CSR and CSD. The chapter is divided into two main parts. The first section covers the relevant literature on CSR in general, while the second section presents a literature review on CSD.

#### 3.2 Concept and Definition of CSR

Although the term 'CSR' is widely used in the literature, there is no generally or commonly-agreed definition of it. Therefore, the term 'CSR' can appear under a variety of terms, such as corporate social performance, corporate citizenship, corporate accountability, and business ethics, to connote the social responsibility of business (Valor 2005). According to Votaw (1972), the term CSR 'means something, but not always the same thing to everybody. To some it means "*legal responsibility or liability*"; to others, it means socially responsible behaviour in an "*ethical sense*"; to still others, it means socially responsible behaviour in a "*causal mode*"; some people see it as a social conscience; some others take it as a synonym for "*legitimacy*" in the context of being proper or valid; still some others see it as a sort of "*fiduciary duty*" that requires businessmen to behave at a higher standard; while many think it is simply 'a charitable contribution' to society' (p.25). Nevertheless, the key principle of these terms is that corporations have obligations to work for social betterment (Frederick 1994).

Although an essential element of CSR is the notion that a business entity has a social responsibility, there is no universal agreement on which kind of social responsibility a business should take. According to the classical viewpoint, a firm is only accountable to its shareholders and therefore its role in society is to maximise its economic value, which in turn increases the wealth of its shareholders. Hence, managers' responsibility is to act in the interest of the firm's shareholders and they have no right to engage in social projects that do not maximise the returns of the business (Friedman 1962). In line with this perspective, Lawrence et al. (1999) suggest that any social responsibility that does not lead to the maximising of the shareholders' wealth should be considered an abuse of the firm's responsibility to its stakeholders. In general, the perspective of the classical or shareholders' viewpoint assumes that the only social responsibility of a business entity is to use its resources to engage in activities that increase its profits without resorting to deception or fraud (Friedman 1962, p.112). Although this perspective has been supported by scholars (e.g. Sundaram and Inkpen 2004; Jensen 2002; Freeman and Liedtka 1991), it has created a long debate about the concept of CSR, and it is not yet widely accepted.

Alternatively, the stakeholder perspective assumes that a firm is accountable not only to its shareholders but also to its stakeholders, who may be affected by the firm's achievements (Freeman 1994). In this regard, Mitchell et al. (1997) claim that, while the firm is pursuing profits, it should take into account the stakeholders' interests. Under this perspective, the World Business Council for Sustainable Development (WBCSD) defines CSR as "the commitment of business to contribute to

sustainable economic development, working with employees, their families and local communities” (WBCSD, 2002, p.6). According to this definition, the basic idea of CSR is associated with the concern of the impact of a corporation’s activities on a wider society. The Commission of European Communities (2001) defines CSR as “a concept whereby companies integrate social and environmental concerns in the business operations and in their interaction with their stakeholders on a voluntary basis” (p.6). Although the European Commission definition is highlighting the social and environmental aspects and interactions of a broader array of stakeholders, it perceives CSR as a voluntary concept that might seem far from settled. Therefore, several broader definitions have been introduced in the literature. One of the most widely accepted definitions was provided by (Carroll 1979) based on four responsibilities, namely economic, legal, ethical and discretionary (p.449):

- Economic responsibility is the foremost responsibility that perceives an operation as an economic unit that assimilates providing sustainable returns for investors, producing goods and services demanded by society, providing high-quality products at fair prices, creating new jobs, and providing safe and fairly paid employment to the workforce (Matten and Moon 2008, p.405).
- Legal responsibility requires all corporations within society to carry out their economic responsibility in accordance with legal requirements and social regulations.
- Ethical responsibility requires businesses to be moral. Therefore, it covers constraints in the legal responsibility, such as ensuring compliance with

societal values and standards, not engaging in misleading advertising, and showing concern for environmental and sustainable development.

- Discretionary responsibility focuses on the activities of corporations in respect of donations to the community. Such activities are voluntary engagements and they may, for example, include social programmes within the community, such as education and health donations, and sponsoring community events.

Carroll (1991, p.42) argues that these four responsibilities can be depicted as a pyramid, in which economic responsibility is the base upon which all the other responsibilities are postulated, as presented in Figure 3.1 below.

**Figure 3-1: Carroll Model**



Source: Carroll (1991, p.42)

An important question regarding the relation between CSR and Corporate Social Responsibility Disclosure (CSD) is: how do firms provide or convey CSR information to a wide range of stakeholders? To address this question, previous studies have investigated the association between CSR and CSD (Belkaoui and Karpik 1989; Ingram and Frazier 1983; Freedman and Jaggi 1982; Abbott and Monsen 1979), based on an assumption that a firm which discloses its CSR activities must undertake such activities. The findings of these studies suggest that CSR and CSD are positively related. In accordance with these findings, several studies (e.g. Lanis and Richardson 2012; Wibowo 2012) have used CSD as a proxy for CSR. Therefore, following the previous studies, the present study uses CSD as a proxy of CSR.

### **3.3 Definition of CSD**

Corporate disclosure is defined as “the publication of any economic information relating to a business enterprise, quantitative or otherwise, which facilitates the making of investment decisions” (Choi 1973, p.160). Cooke (1989b) provides a more extensive definition and defines corporate disclosure as “those items in corporate annual reports that are relevant and material to the decision-making process of users who are unable to demand information for their particular needs” (p. 6).

The term “social accounting” is sometimes used by various authors to refer to CSD (e.g. Gray 2002; Parker 1991; Zeghal and Ahmed 1990; Gray et al. 1987). In this regard, Mathews and Perera (1995) indicate that, “at the very least, social accounting means an extension of disclosure into non-traditional areas such as providing information about employees, products, community service and prevention or reduction of pollution” (p.364). Gallhofer and Haslam (2003) argue

that "social accounting is demarcated as an accounting going beyond the financial economist, notably in the assessing of business performance. It is differentiated from an accounting constrained to reflect what are conventionally assumed to be the interests of the shareholders. Social accounting here reflects a presumption, at least on the face of it, that the goal of the business organisation properly goes beyond the narrow and conventional focus upon profit or financial wealth maximisation in current or envisaged contexts. Social accounting goes beyond an accounting for the use of shareholders only, with other users, including the public at large, and hence multifarious usage, being envisaged" (p.113). According to Gray (2002), social accounting takes a wide variety of forms and appears under different names such as social responsibility accounting, social audits, corporate social reporting, employee and employment reporting, stakeholder dialogue reporting and environmental accounting and reporting. This may lead to some confusion as it may be used to indicate very different things.

Elias and Epstein (1975) provide one of the earliest definitions of CSD and define it as "reporting on some aspects of the company's social activities, performance or impact" (p.37). Since then, many efforts have been made to define CSD. Guthrie and Mathews (1985) define CSD as "provision of financial and non-financial information relating to an organisation's interaction with its physical and social environment, as stated in corporate annual reports or separate social reports" (p.78).

One of the broadest definitions, which is still valid today, is provided by Gray et al. (1987, p.ix), who suggest that CSD is "the process of communicating the social and environmental effects of the organisation's economic actions to particular interest

groups within society and to society at large". In addition, Gray et al. argue that these actions "involve extending the accountability of organizations (particularly companies), beyond the traditional role of providing a financial account to the owners of capital, in particular, shareholders. Such an extension is predicated upon the assumption that companies do have wider responsibilities than simply to make money for shareholders" (Gray et al. 1987, p.ix).

Based on the above discussion, it can be concluded that CSD is a broad term that may include various issues including community involvement-related disclosure, product and customer relations. environment and energy-related disclosure, and human resources-related information (Gao et al. 2005; Deegan 2002; Williams and Ho Wern Pei 1999; Hackston and Milne 1996; Gray et al. 1995b; Ng 1985).

### **3.4 EM and CSR**

Agency theory provides an explanation that the agent (the manager) is responsible for making decisions on behalf of the principal (owner) and he/she must practise his/her duties in such a way as to increase the owner's wealth and to fulfil his/her expectations (Jensen and Meckling 1976). However, the separation between ownership and control in modern corporations, together with the presence of information asymmetries within companies, spawn the possibility of opportunistic behaviour by managers from those of the owners, and hence pursue self-interested objectives (the agency problem) (Prior et al. 2008). Given that managers practice EM either to gain some private benefits at the expense of other stakeholders or to mislead shareholders about the firm's underlying financial performance (Healy and Wahlen 1999), it has been acknowledged that EM is considered as a type of agency

cost because managers look after their own interests by releasing financial reporting that do not reflect an accurate economic picture of the company (Prior et al. 2008). On the other hand, corporate disclosure is viewed as a form of monitoring mechanism used by investors and other external users to reduce information asymmetry problem (Huang and Zhang 2011). Hence, disclosure is considered as one of the possible solutions to reduce the agency problem between managers and shareholders (Eng and Mak 2003).

Given that that financial transparency and accountability are vital principles of CSR, it has been argued that EM is expected to occur less in social responsible companies because such companies do not hide unfavourable earnings realization and, hence, conduct no EM (Chih et al. 2008). On the other hand, managers may use CSR as entrenchment mechanism to protect them-selves against stakeholder activism and vigilance (Prior et al. 2008).

Although very few studies have addressed the link between EM and CSR, these studies, in general, have documented two contradictory perspectives. Since EM is perceived as an irresponsible act and inconsistent with CSR principles, the first perspective argues firms with strong commitment to CSR are more prone to act in a responsible way when reporting their financial statements (Choi et al. 2013). Likewise, Kim et al. (2012) argue that socially responsible companies that expend effort and resources in choosing and implementing CSR practices to meet ethical expectations by stakeholders are more likely to prevent EM behaviour, thereby providing more transparent and reliable financial information. On the other hand, the second perspective argues that CSR can be used as an effective tool to deal with



stakeholder activism and vigilance when managers manipulate earnings (Prior et al. 2008). With this regard, Prior et al. (2008) argue that managers who manage earnings engage in board activities such as CSR to bolster their own job security and gain support from stakeholder groups. In line with this view, Choi et al. (2013) argue that CSR can be used as an entrenchment mechanism to protect managers who act in pursuit of private benefits by distorting earnings information.

Empirically, the review of the literature reveals that the findings of the prior studies on the relation between EM and CSR are also contradictory. While several studies find that EM and CSR are negatively linked, others find a positive relationship between the two variables. For example, Kim et al. (2012) investigate the association between EM and CSR in US companies and find that social responsible companies are less likely to manage earnings via discretionary accruals or real EM. In line with the findings of Kim et al.'s (2012) study, Choi et al. (2013) find that South Korean firms with high level of CSR engage in low level of EM. Likewise, Chih et al. (2008) investigate the link between EM and CSR using multinational firm data for 46 countries and find that firms with great commitment to CSR engage in low level of earnings smoothing and avoidance, while the extent of earnings aggressiveness is increased.

On the other hand, other studies have found that EM and CSR are positively related. For instance, Prior et al. (2008) using multinational firm data for 26 countries and find that managers who manipulate earnings resort to CSR activities to deal with stakeholders' activism and vigilance. Hence, CSR is used as an effective tool to hide managers' opportunistic behaviour. The similar results are found by Gargouri et al.

(2010) find a positive relationship between EM and CSR in Canadian companies. Likewise, Patten and Trompeter (2003) investigate the link between environmental disclosure and EM during 1984 chemical leak at Union Carbide's Bhopal, India plant and find that companies with higher levels of pre-event environmental disclosures tend to engage in income-increasing EM.

Based on above discussion, it can be concluded that although agency theory argues that disclosure as a monitoring tool may reduce information asymmetry between managers and stakeholders, thereby constraining EM practices, the previous studies have found mixed and contradictory results. While several studies find that EM and CSR are negative related, others find that EM and CSR are positively related. Thus, this study is motivated to investigate whether or not EM and CSR are linked in the context of the UK.

### **3.5 Theories related to EM and CSR**

Researchers have introduced various theories to explain the motivations behind CSR activities (e.g. Deegan et al. 2002; Hooghiemstra 2000; Gray et al. 1995a). These theories are, for example, Agency Theory, Stakeholder Theory, Political Economy Theory, Legitimacy Theory, Signalling Theory, Cost-benefit Theory, and Political Cost Theory. However, for the purpose of the present study, only Stakeholder, Legitimacy, Political Economy, Agency, and Signalling theories are reviewed because these theories are sufficient to assist with the development of the study's hypotheses.

### 3.5.1 Stakeholder Theory

Stakeholder theory is examined in the literature from three perspectives: the instrumental, the descriptive, and the normative perspectives (Donaldson and Preston 1995). While the first two perspectives suggest that a business should strategically manage powerful stakeholders by identifying them with the self-interest of the business, the normative perspective suggests that managers should address all stakeholder groups from an accountability perspective (Gray et al. 1997; 1996; 1995a; Donaldson and Preston 1995; Gray et al. 1988; Freeman 1984).

Under the instrumental and descriptive perspectives, CSD is seen as a means to manage only the perception of powerful stakeholder groups (Ullmann 1985). Therefore, CSD is provided for the strategic purpose of gaining approval and support for the firm's continuing operation, rather than for accountability purposes (Deegan 2002). In line with this suggestion, CSD is made to manage the perception of stakeholder groups who are seen as important to the firm.

On the other hand, the normative stakeholder perspective explains that firms have a duty and obligation to a wider range of stakeholder groups and that CSD is obligatory for the firm in order to discharge wider accountability by providing information to relevant stakeholders (Buhr 2001; Guay et al. 1996). However, this perspective provides a prescription for how managers can undertake strategies to manage and treat their various stakeholders; it does not have a direct role in predicting managerial behaviour in practice (Deegan 2002).

Based on the notion that a firm is perceived not as a bilateral relationship between shareholders and managers, but as a multilateral set of relationships amongst

stakeholders, Prior et al. (2008) argue that EM not only affects a firm's shareholders but also has an impact on stakeholders. Hence, when stakeholders suspect EM, the firm is expected to immediately lose value on the stock market.

Although stakeholder theory is useful because it "defines the influencing /influenced groups for us and explicitly defines what accountability the organisation itself is willing to recognise and discharge" (Gray et al. 1997, p.333)", it has been criticised because it is based on the relative power and influence of stakeholders, which could marginalise the rights of other stakeholders who may be seen as less important (Deegan 2002; Gray et al. 1997).

### **3.5.2 Legitimacy Theory**

Legitimacy theory argues that a firm's activities must be legitimate in the eyes of society if it is to be allowed to continue its operations. According to Suchman (1995), legitimacy theory is "a generalised perception or assumption that the actions of any entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions" (p. 574). Hence, if the company loses its legitimacy, society may revoke its contract and prevent it from continuing its operations (Deegan and Rankin 1996; Guthrie and Parker 1989). In accordance with this perspective, it is accepted that companies disclose social information to show that they are conforming to the expectations and values of the society within which they operate, as well as to legitimise their behaviour (Deegan and Rankin 1996; Guthrie and Parker 1989).

Maali et al. (2006) argue that firms need to provide voluntary social disclosure in order to meet broad expectations of society relating to employee welfare,

community and the treatment of the natural environment. Furthermore, O'Donovan (2002); and Brown and Deegan (1998) state that social expectation is not a static concept; in fact, it may change over time, which means that firms need to improve their social activities in order to continuously maintain their legitimacy. According to Dowling and Pfeffer (1975), there are various strategies that firms can adopt in order to maintain their legitimacy within the society in which they operate, and all these strategies can be involved to make social disclosure as a means of showing that firms are conforming to society's expectations. In this regard, Lindblom (1994) argues that, when a disparity between an entity's value system and the value system of the larger social system is present, there is a threat to the entity's legitimacy. In addition, the study suggests that firms can narrow this legitimacy gap by adopting one of four strategies.

First, the firm might seek to inform its stakeholders about actual changes in its performance and activities. Second, the firm may seek to change the perceptions of the relevant publics without changing its actual behaviour. Third, the firm may seek to manipulate perception by deflecting attention from the issue of concern to other related issues via an appeal to, for example, emotive symbols. Fourth, the firm might seek to change external expectations of performance. According to Lindblom (1994), these four legitimating strategies may be used by the firm to alter the perception or expectations of society with or without changing the real activities; the study suggests that, while the disclosed social information might be the same, the purpose behind the disclosure may have four different purposes. Along the same lines, Gray et al. (1995a) indicate that the first strategy can be used "in response to a

recognition that the legitimacy gap arose from an actual failure of performance of the firm. The second legitimacy strategy can be applied when the firm thinks that the legitimacy gap arose via misperceptions on the part of the relevant public. The third strategy can be chosen whenever the firm with a legitimacy gap regarding its pollution performance chooses. The fourth strategy can be adopted when the firm considers that the relevant public have unrealistic or incorrect expectations of its responsibilities" (p.54).

Patten (1992, 1991) states that firms may choose to present social disclosure in annual reports to maintain or increase perceptions of legitimacy and respond to public policy changes. Besides annual reports, firms may use advertising, press releases, and information in their own publications or brochures in order to influence the perceptions of the public policy process (Zeghal and Ahmed 1990). Parker (1986) argues that "social disclosure can act as an early response to impending legislative pressure for increased disclosure and as a counter to possible government intervention or pressure from other outside interest groups. Thus, from this viewpoint, CSD might be used to anticipate or avoid social pressure. At the same time it may be used to boost the corporation's public standing" (p. 76). Therefore, as argued by Gray et al. (1988), CSD in the company reports may be used as a means of anticipating or avoiding social pressure as well as enhancing the firm's image or reputational status. Maali et al. (2006) argue that firms need to disclose enough social information to legitimise their activities and behaviours as well as to assess whether they are behaving like good corporate citizens.

In terms of EM, Sun et al. (2010) indicate that managers who engage in EM tend to realise that CSD can be used to maintain the firm's legitimacy, specifically with social and political stakeholders. Therefore, CSD is seen as a means of informing stakeholders of the firm's wider interests and of its accountability that prompts it to behave in a socially responsibility manner.

However, several studies have employed legitimacy theory as a driver for social disclosure (e.g. Branco and Rodrigues 2008; De Villiers and van Staden 2006; Ahmed and Sulaiman 2004; Campbell et al. 2003; Deegan and Rankin 1996). Gray et al. (1995a) argue that legitimacy theory overlaps with political economy theory. For example, Gray et al. (1995a) point out that CSD as an organisational practice can be more clearly understood through political economy theory rather than solely by economic or moral explanations. In addition, Parker (2005) states that legitimacy theory is lacking specificity, and its ability to predict and explain managerial behaviour remains uncertain.

### **3.5.3 Political Economy Theory**

Political economy theory is based on the premise that the political, economic and social contexts are inseparable; thus, all these aspects should be considered in CSD studies (Guthrie and Parker 1989). The study by Gray et al. (1995a) agrees with the perspective of Guthrie and Parker by indicating that "the essential point, it seems, is that the economic domain cannot be studied in isolation from the political, social and institutional framework within which the economy operates" (p. 52). According to Gray et al. (1995b), political economy theory focuses on the exchanges that occur in any framework such as the market and the relationships among social institutions

participating in such exchanges. Therefore, CSD is considered a means of constructing and affecting the political and economic environment surrounding the firm, which means that firms appear to respond to government or public pressure in order to provide information on their social impact (Guthrie and Parker 1989).

However, a number of studies have attempted to interpret CSR using political economy theory in order to explain and understand the motivations that induce firms to provide CSD through their reports (Adams and Harte 1998; Adams et al. 1995b; Gray et al. 1995a; Guthrie and Parker 1989). Gray et al. (1996) categorise this theory into two approaches: bourgeois political economy theory and classical political economy theory approaches. The first approach tends to focus on the interaction of competing groups within society and perceives the world as essentially pluralistic; however, it generally ignores sectional interests, structural inequity, conflict and the role of the State (Cowen et al. 1987). Williams and Ho Wern Pei (1999) state that “bourgeois political economy concentrates on the interaction of actors within a pluralistic world” (p.211). This may indicate that different individuals, institutions and organisations, seeking to preserve their own self-interests, attempt to operate within the system through various relationships with others (Dahl 1982). The theory emphasises that actors, be they individuals or organisations, have the right to pursue their own goals and self-interests (Clark 1991). These rights, however, are moderated by the social context in which they exist (Gray et al. 1996).

The classical political economy theory, on the other hand, argues that the conflict between the different groups is inherent within society (Gray et al. 1996; Cooper and Sherer 1984). Deegan (2006) describes the classical political economy theory as that



which perceives “accounting report and disclosures as a means of maintaining the favoured position of those who control scarce resources, and as a means of undermining the position of those with scarce capital. It focuses on the structural conflicts within society” (p.274).

In respect of EM, Patten and Trompeter (2003) argue that firms that do have incentives to reduce reported earnings are expected to exhibit a lower magnitude of EM in response to regulatory threats. In addition, they state that if a firm’s managers believe that CSD is an effective tool for reducing the likelihood of regulatory actions, it would appear that firms with higher levels of CSD would have less incentive to engage in income-decreasing EM. In addition, Yip et al. (2011) argue that, while an ethical perspective suggests that ethical firms will minimise EM, the political cost offers another reason for lower EM. Therefore, they assume that firms with high CSD are expected to exhibit a lower magnitude of EM when political costs are high. Although political economy theory explains the motivations for conducting CSD (Guthrie and Parker 1989), it fails to consider the internal factors present in companies, such as the corporate characteristics that may have an important effect on social disclosure (O’Donovan 2002; Patten 1991).

#### **3.5.4 Agency Theory**

Jensen and Meckling (1976) define an agency relationship as “a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent” (p. 308). In the context of business, the agent represents the managers of a corporation, while the principal(s) refers to the corporation’s

shareholders. Ideally, based on the business contract between management and owner, it is assumed that management is responsible for making decisions on behalf of the owners and they must practise their duties in such a way as to increase the owners' wealth and to fulfil their expectations. However, when managers and owners have different objectives, the conflict of interests problem occurs, and managers will act and make economic decisions that fulfil their own self-interests at the expense of the shareholders (e.g. Prior et al. 2008; Watts and Zimmerman 1986). In addition, information asymmetry exists when the managers of a firm have superior access to information as compared to the investors (e.g Fraser et al. 2009; Marshall and Weetman 2007; Arnold and de Lange 2004). In this regard, Prior et al. (2008) argue that the separation of ownership and control of modern corporations, together with the existence of information asymmetries within companies, spawns the possibility of opportunistic behaviours by the managers, who may have different objectives from those of the shareholders and may thus pursue self-serving goals (the agency problem (p.161).

Given that managers of a company are concerned about their job positions, security and rewards, and with maximising their wealth, it is possible that they will engage in undesirable activities such as EM, which in turn may harm the company's value and reputation as well as causing investors to make non-optimal investment decisions (agency problem) (Prior et al. 2008). Therefore, transparency and accountability systems should be put in place in order to avoid agency problems (Watts and Zimmerman 1986). In this regard, Morris (1987) states that, without appropriate

monitoring, the separation of ownership and control of a company might create serious problems.

In order to solve the agency problem, Healy and Palepu (2001, p.409-410) suggest several solutions. The first is to develop optimal contractual incentives to reduce the conflict of interests between managers and investors. The second is to ensure that the role of the mentoring function by the board of directors is sufficiently effective to observe and control for managerial behaviour on the behalf of investors. Finally, financial analysts and rating agencies should make use of private information provided by managers to uncover any managerial misuse of the firm's resources. These solutions imply that contractual agreements and internal and external corporate governance mechanisms play an essential role in reducing the agency problem.

With respect to corporate disclosure, Eng and Mak (2003) indicate that disclosure is recognised as one of the possible solutions to reduce the agency problem since well-informed investors are expected to scrutinise firms based on the information provided to them, and this subsequently reduces the agency costs. Likewise, Huang and Zhang (2011) suggest that disclosure is viewed as one of the monitoring mechanisms used to reduce information asymmetry between managers and investors; hence, it may be an effective tool to decrease the agency problem. In addition, Sun et al. (2010) state that companies may use different methods such as voluntary disclosure to reduce the conflict of interests between managers and investors.

Given that the financial transparency and accountability are vital principles of CSR (Chih et al. 2008), EM is expected to occur less in companies that disclose more information on their social activities, because when the information transparency is increased, it is expected that the information asymmetry between managers and investors will be decreased, which will enable investors to detect EM (Jo and Kim 2007). On the other hand, EM is considered more likely to occur in those companies with limited or low levels of CSD, as a result of which information asymmetry is expected to be high (Jo and Kim 2007). In addition, Eisenhardt (1989) states that “....since information systems inform the principal about what the agent is actually doing, they are likely to curb agent opportunism because the agent will realize that he or she cannot deceive the principal”(p.60).

### **3.5.5 Signalling Theory**

The problem of information asymmetry, or the signalling problem, exists when one party has greater access to information compared to the other (Watts and Zimmerman 1986). In other words, when managers have greater access to the company's information and transactions compared to the investors, who rely on the information provided by those managers who may conceal the company's true economic value, the problem of information asymmetry exists. According to signalling theory, a company discloses information to reduce information asymmetry and to signal to investors that it is performing better than its competitors (Álvarez et al. 2008; Miller 2002). However, Hughes (1986) states that the credibility of information provided by a firm is an essential element in ensuring lower information asymmetry. In this regard, Bhattacharya and Dittmar (2001) argue that “A good firm

can distinguish itself from a bad firm by sending a credible signal about its quality to capital markets. The signal will be credible only if the bad firm chooses not to mimic the good firm by sending the same signal” (p.1).

Although there are a number of overlaps between signalling theory and agency theory as a consequence of significant similarities (Sun et al. 2010), signalling theory is more concerned with the quality than the quantity of information (e.g. Morris 1987; Watts and Zimmerman 1986). In this respect, Gray (2007) states that high-quality firms tend to use CSD as an alternative to the classical financial reporting, while low-quality companies choose non-disclosure, consistent with constrained accounting information. In addition, the study argues that the quality of company reports is a signal to investors and financial markets that managers are able to control social risks within the company. Likewise, Sun et al. (2010) indicate that corporate environment disclosure as a part of CSR is a signal to investors and other powerful and economic stakeholders that the company is actively taking part in CSR and that its market value is in good condition. However, there is no guarantee that companies will provide accurate information because managers’ disclosure decisions are determined by the marginal benefits to be gained from reducing information asymmetry in the market (Abhayawansa and Abeysekera 2009).

Given that disclosure is used by investors as a monitoring tool to control managers’ opportunistic behaviour (Bushman and Smith 2001), it is predicted to reduce the information symmetry (agency problem) between companies and their investors. In this regard, Healy and Palepu (2001) state that investors need information in order to monitor a firm’s activities and make connections between managerial decisions

and the firm's performance. In consistency with this view, agency theory has been widely used in CSR and EM studies (Choi et al. 2013; Jiang et al. 2013; Pyo and Lee 2013; Yongtae et al. 2012; Chih et al. 2008; Prior et al. 2008; Jo and Kim 2007) to explain and understand the information asymmetry problem. Based on the notion that corporate disclosure is a useful tool for reducing information asymmetry, prior studies predicted a negative association between disclosure and information asymmetry (Heflin et al. 2005; Brown et al. 2004; Collier and Yohn 1997; Welker 1995).

Based on the above, it can be noticed that the agency and signalling theories are partially overlapping in the sense of that both theories related to information asymmetry between firms and their investors. They both perceived disclosure as a means to reduce information asymmetry (Morris 1987). In this regard, (Morris 1987, p.53) points out that "Rational behaviour is common to both theories; information asymmetry is implied by positive monitoring costs in agency theory; quality can be defined in terms of agency theory variables; and signalling costs are implicit in some bonding devices of agency theory. Therefore, agency theory and signalling theory are consistent. However, the previous studies have implied agency theory to explain EM behaviour (Kent et al. 2010; Jiraporn et al. 2008; Wallace et al. 2004). According to agency theory, EM is perceived as a form of agency cost that arises from both information asymmetry and the conflicts between managers and investors (Prior et al. 2008; Christie and Zimmerman 1994). In line with this argument, the study by Richardson (2000) finds that information asymmetry is positively related to EM, which implies that the greater the level of information asymmetry the higher the

possibility of EM. In contrast, when the level is relatively low, EM is less likely to be practiced.

On the other hand, Kim and Verrecchia (1994) suggest that information asymmetry between firms and investors decreases with voluntary disclosure. Likewise, (Jensen and Meckling 1976) indicate the corporate disclosure is perceived as one of tools mitigating agency cost. Furthermore, Eng and Mak (2003) argue that CSD is a possible solutions for reducing the conflict between managers and investors, which may and then may decrease the level of EM. Given that increasing the level of disclosure is a possible solution to constrain EM through decreasing information asymmetry and conflicts between managers and shareholders, the present study employs agency theory to explain the potential relationship between CSR and EM.

### 3.6 Summary

This chapter provides a review of CSR: its definitions, motivations and the link with its disclosure. Then CSD is reviewed by addressing its definitions and the theories. It concentrates, in particular, on the theories used in the literature to explain and understand the relationship between CSD and external stakeholder groups. CSD will be used as a proxy for CSR in the study. Since EM is perceived as an agency problem, CSR is perceived as a monitoring tool available to stakeholders to monitor managers' behaviour and actions. The review of the literature reveals that the agency theory is a more appropriate framework with which to explain the association between EM and CSD. However, it is found that signalling theory is related to the quality of information provided by companies and the information asymmetry problem. Given that the present study is concerned with the association between the quantity of CSD and EM, the agency theory is applied as a primary theory to explain and interpret the study results.



## **Chapter Four**

### **Research Methodology**

#### **4.1 Introduction**

The previous chapters provide a general review of the literature on EM and CSR and its disclosure. This chapter on methodology is structured as follows. Sections 4.2 present the study aim and research questions. Section 4.3 focuses on the sample selection and data collection. Section 4.4 discusses the measurements variables. Sections 4.5 and 4.6 present the empirical models and analytical procedures respectively. Section 4.7 provides a summary of the chapter.

#### **4.2 Main Research Question and Objectives**

The primary aim of the present study is to investigate whether or not CSR and EM are related in UK companies. In particular, it aims to investigate whether the level of CSD (proxy for CSR) impacts the magnitude of discretionary accruals (proxy for EM). To achieve this aim, the main question of the present study is: Is there a relationship between the magnitude of EM and the level of CSR in the UK?

Three empirical objectives are formulated to address the research main question. The first objective is to identify which of the existing EM models is most suitable for measuring EM practices in the UK. This is achieved by reviewing the use of different models in assessing EM. This study reviews and critically evaluates three different models, namely the Jones (1991), modified Jones (Dechow et al. 1995), and the performance - matched (Kothari et al. 2005). These models are applied in the previous studies. In addition and under the first objective, the level and the direction

of reported earnings is also exploring. The second objective is to investigate the total and sub-themes levels of CSR. This objective is tested using alternative measurements. The third objective is to investigate whether or not discretionary accruals (as proxy for EM) and Corporate Social Responsibility disclosure (CSD) (as proxy for CSR) are linked in the context of the UK.

### **4.3 Hypotheses Development**

The main purpose of this study is to investigate whether or not EM and CSR are linked. Thus, the primary question of the study is developed as follows:

#### **Is there a relationship between EM and CSR in UK companies?**

Agency theory provides explanation of that agency problems occur and conflicts arise between managers and owners when the managers act for their own benefits rather than optimizing the firms' value from the stakeholders' viewpoint (Watts and Zimmerman 1986). Information asymmetry occurs when managers have superior access to the information as compared to the owners (Fields et al. 2001). While managers work in the firm every day and are knowledge about all business transactions and affairs, stakeholders, on the other hand, depend on periodic sources of information, such as annual and interim reports to enable them to value firm's value. Thus, information asymmetry will be higher if the quality of information is low.

The separation of ownership and control of a company, together with existence conflicts problem and information asymmetry, could create serious problems because managers are more concerned about their job security, rewards, ability to

remain in power, and to maximize their own wealth (Morris 1987). Therefore, it is possible that managers would become involved in undesirable activities that could indirectly harm the company as well as the other stakeholders but which would benefit managers. Managers could undertake opportunistic EM to achieve their objectives, which in turn, increasing firm's agency cost.

Since agency relationships suffer from the problems of conflict of interest and information asymmetry, an optimal solution should be discovered to control such problems. Several solutions have introduced in the literature to solve firm's agency problems. For example, Watts and Zimmerman (1986) argue that the transparency and accountability system is one of the solutions that should be put in place in order to avoid agency problems. Given that financial transparency and accountability are vital to CSR, a closure investigation of EM (agency cost) and CSR is required (Chih et al. 2008).

Agency theory has been previously employed in the literature to describe the link between EM and CSR. For instance, Jo and Kim (2007) argue that EM is expected to occur less in companies that disclose more information on their social activities, because when the information transparency is increased, it is expected that the information asymmetry between managers and investors will be decreased, which enables investors to detect EM. Likewise, Eisenhardt (1989) states that "...since information systems inform the principal about what the agent is actually doing, they are likely to curb agent opportunism because the agent will realize that he or she cannot deceive the principal" (p. 60). Similarly, Shleifer (2004) argue that manipulate earnings, which unethical behaviour, occurs less often in corporations

with a strong commitment to CSR. In addition, Chih et al. (2008) state that a strong commitment to CSR principles prevents managers from using their opportunistic discretion over earnings.

Based on the above discussion, the following hypotheses have been developed:

*H1: "There is a negative relationship between the level of EM and CSR".*

The previous hypothesis is developed to determine the association between the total level of CSR and EM. Therefore, in order to test the association between the CSR sub-themes (i.e. community (COM), employee (EMP), environment (ENV), products and services (PRO), customers (CUS), and others (OTH)) and EM, a further six hypotheses are developed as follows:

*H2: "There is a negative relationship between the level of EM and COM sub-score".*

*H3: "There is a negative relationship between the level of EM and EMP sub-score".*

*H4: "There is a negative relationship between the level of EM and ENV sub-score".*

*H5: "There is a negative relationship between the level of EM and PRO sub-score".*

*H6: "There is a negative relationship between the level of EM and CUS sub-score".*

*H7: "There is a negative relationship between the level of EM and OTH sub-score".*

## **4.4 Sample Selection and Data Collection**

### **4.4.1 Sample Selection**

The study covers the period from 2008 to 2010. There are several reasons for this selection. First, the review of EM literature reveals that during the financial crisis period, managers may have an incentive to manage earnings to mitigate the impact of the financial crisis on firm's economic financial performance in order to increase the shareholders' confidence in the firm's economic performance (Rolland and dirigé 2013; Berndt and Dipl-Kfm. 2011). Since 2008 is considered as the year when the

global financial crisis started, one might expect that EM is more prevalent in a period of uncertainty during and after the global financial crisis in 2008. On the other hand, given that CSR is viewed as one form of monitoring mechanism used by investors (Jensen and Meckling 1976), it is expected that CSR to be more effective when managers have an incentive to manage earnings during the financial crisis (Huang and Zhang 2011). In light of the above statement, the time period covered in this study (2008-2010) allows this study to examine whether CSR influence EM activities during the global financial crisis. Second, the introduction of the Climate Change Act in 2008, demanded firms to include disclosures of greenhouse gas emissions in their annual and accounting reports (Climate Change Act 2008). In addition, the amended Companies Act 2006 required firms to include disclosures regarding essential CSR issues such as greenhouse gas emissions, water, and energy within the business review or operational and financial review in their annual and accounting reports (The Companies Act 2006).

The initial sample for this study is the FTSE 350 Index, which includes the top 350 UK companies classified by total market capitalisation in the London Stock Exchange (LSE). Furthermore, the FTSE 350 Index was chosen because it includes a broad range of industries and commercial activities and accounts for a significant portion of the UK's economic output, which in turn ensures that the sample is large enough for the statistical procedures to be conducted.

Utilities, mining, and financial industries are removed from the initial sample due to their unique characteristics and the specific regulations that may affect the results.

This approach is consistent with the previous EM literature (Klein 2002; DeFond and Jiambalvo 1994). The justifications for excluding these industries are as follows:

- Firms in utilities industry are excluded because they are motivated to adopt conservative accounting policies to defer income recognition since these industries are set on fixed accounting rates of return. Thereby, the task of detecting managers' opportunistic manipulation behaviour would be difficult.
- Mining firms are excluded because the market values of these companies differ from other companies in that they include other factors such as the value of any real operational options (Kelly 2004; Brennan and Schwartz 1985).
- Financial companies are excluded because they have special accounting policies that differ from other companies, thus making the estimation of discretionary accruals difficult (Chtourou et al. 2001; Peasnell et al. 2000b).

The initial sample was reduced by a further 30 firms within industries with fewer than six firm-year observations for each sector<sup>3</sup>. Another 16 firm-year observations were excluded since their data are not available. After the eliminations, the final sample is 515 firm-year observations, as presented in Table 4.1.

In line with the industrial classification supplied by FAME and Thomson One Banker, The Industrial Classification Benchmark (ICB) is used to perform EM estimation related to coefficient parameters. The ICB is used by most stock exchanges worldwide including, for example, the London Stock Exchange and the New York

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<sup>3</sup>. Ordinary Least Squares (OLS) regression is applied to estimate discretionary accruals. The OLS regression requires at least six observations to be applied. DeFond and Jiambalvo (1994) and Subramanyam (1996), for example, indicated that it is necessary to include industries with sufficient observations to ensure unbiased estimation. Therefore, industries with fewer than six observations were removed from the initial sample.

Stock Exchange. Table 4.2 presents the distribution of the final sample in accordance with ICB classification.

**Figure 4-1: Sample Selection Procedure for the Study Period**

<b>Description</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Pooled</b>
Initial sample (FTSE 350 Companies)	350	350	350	1050
<b><u>Excluded:</u></b>				
<i>Financial industries (i.e. financial, insurance, and investment companies)</i>	133	133	133	399
<i>Regulated industries (Utilities)</i>	9	9	9	27
<i>Mining industry</i>	21	21	21	63
				<b>489</b>
<b><u>Industries with fewer than six firms</u></b>				
<i>Automobiles &amp; Parts</i>	1	1	1	3
<i>Construction &amp; Materials</i>	3	3	3	9
<i>Chemicals</i>	5	5	5	15
<i>Forestry &amp; Paper</i>	1	1	1	3
				<b>30</b>
Firms with unavailable data	5	11	-	<b>16</b>
<b>Final sample</b>	<b>172</b>	<b>166</b>	<b>177</b>	<b>515</b>

**Figure 4-2: Final Sample for the Study Period Classified by Industry**

<b>ICB Code</b>	<b>Industries</b>	<b>2008</b>	<b>%</b>	<b>2009</b>	<b>%</b>	<b>2010</b>	<b>%</b>	<b>Pooled</b>	<b>%</b>
0500	Oil & Gas	14	0.081	13	0.078	16	0.090	43	0.083
2700	Industrial Goods & Services	53	0.308	53	0.319	55	0.311	161	0.313
3500	Food & Beverages	11	0.064	11	0.066	11	0.062	33	0.064
3700	Personal & Household Goods	12	0.070	12	0.072	13	0.073	37	0.072
4500	Health Care	8	0.047	8	0.048	9	0.051	25	0.049
5300	Retail	25	0.145	25	0.151	25	0.141	75	0.146
5500	Media	9	0.052	9	0.054	8	0.045	26	0.050
5700	Travel & Leisure	20	0.116	20	0.120	20	0.113	60	0.117
6500	Telecommunications	6	0.035	0	0.000	6	0.034	12	0.023
9500	Technology	14	0.081	15	0.090	14	0.079	43	0.083
<b>Total</b>		<b>172</b>	<b>100</b>	<b>166</b>	<b>100</b>	<b>177</b>	<b>100</b>	<b>515</b>	<b>100</b>

#### **4.4.2 Data Collection**

Since this study seeks to investigate whether or not CSR impacts EM, four main resources are used to collect the data, namely FAME, Thomson One Banker, firms' annual reports, and CSR reports<sup>4</sup>, if any. Most of the variables related to EM are collected from FAME and Thomson One Banker. The other variables related to CSR and corporate governance are gathered from individual firms' annual reports and CSR reports, if any.

### **4.5 The Measurements of the Study Variables**

#### **4.5.1 Measurement of EM (Dependent Variable)**

The review of EM literature reveals that three alternative approaches are currently used in the literature to measure EM. These approaches are total-accruals, specific-accruals, and frequency distribution approaches (see Section 2.5 of Chapter 2). In spite of the advantages of using the specific-accruals approach to estimate EM, it is insufficiently flexible to investigate additional variables such as corporate governance and CSR (McNichols 2000). In addition, the frequency distribution approach has also been criticised because it does not enable researchers to assess the extent of EM or to differentiate between discretionary accruals and non-discretionary accruals (McNichols 2000). On the other hand, the total-accruals approach allows researchers to control for additional variables and distinguish between non-discretionary and discretionary accruals. Therefore, the aggregate-accruals approach is preferred to the other two approaches in recent EM studies (Choi et al. 2013; Pyo and Lee 2013; Kim et al. 2012; Hong and Andersen 2011; Yip et

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<sup>4</sup> Whatever the name of the corporate social responsibility report, be it the corporate responsibility report, the environmental report, social and environmental citizenship report, the corporate sustainability report, etc.



al. 2011; Mohamad et al. 2010; Sun et al. 2010). Following the previous studies, the present study applies total-accruals to measure discretionary accruals. According to this approach, there are three steps to measure discretionary accruals. The first step is to calculate total accruals, the second is to estimate non-discretionary accruals, and the third is to predict discretionary accruals. Each of these three steps is discussed as follows.

#### **4.5.1.1 Estimating Total Accruals**

To calculate total accruals, there are two approaches have been used in the literature. These approaches are traditional balance sheet approach (Dechow et al. 1995; Jones 1991; Healy 1985) and cash flow approach (Kim et al. 2012; Hong and Andersen 2011; Sun et al. 2010; Kothari et al. 2005; Klein 2002; Becker et al. 1998; Subramanyam 1996; DeFond and Jiambalvo 1994). Under the traditional balance sheet approach, total accruals are calculated as follows:

##### **Equation 4-1: Total accruals (balance sheet approach)**

$$TA_t = \Delta CA_t + \Delta CASH_t - \Delta CL_t + \Delta DCL_t - DEP_t$$

Where:

- $TA_t$  : Total accruals in year t
- $\Delta CA_t$  : Change in current assets in year t
- $\Delta CASH_t$  : Change in cash and cash equivalents in year t
- $\Delta CL_t$  : Change in current liabilities in year t
- $\Delta DCL_t$  : Change in debt included in current liabilities in year t
- $DEP_t$  : Depreciation and amortization expense in year t

In accordance with the cash flow approach, total accruals are measured as follows:

#### Equation 4-2: Total accruals (cash flow approach)

$$TA_t = EBXA_t - OC_t$$

Where:

- $TA_t$  : Total accruals in year t  
 $EBXA_t$  : Earnings before extraordinary and abnormal items in year t  
 $OC_t$  : Operating cash flow in year t

Although the balance sheet and cash flow approaches have been used in the literature, Hribar and Collins (2002) indicate that the cash flow approach produces fewer measurement errors compared to the balance sheet approach to estimating accruals. In line with this argument, a significant number of recent studies have preferred to apply cash flow to estimate accruals (Pyo and Lee 2013; Kim et al. 2012; Hong and Andersen 2011; Sun et al. 2010; Chih et al. 2008; Gong et al. 2008; Gunawan 2007; Kothari et al. 2005). The present study follows the previous studies and calculates total accruals in accordance with the cash flow approach. Therefore, total accruals are defined as the difference between earnings before extraordinary and abnormal items and operating cash flow.

#### 4.5.1.2 Estimating Discretionary Accruals

Although EM literature has suggested a number of discretionary models (see Section 2.5.1 of Chapter 2), the discretionary accruals models most commonly used in empirical EM research are the Jones, modified Jones, and performance-matched models (Choi et al. 2013; Jiang et al. 2013; Pyo and Lee 2013; Sun and Rath 2010; Kothari et al. 2005; Bartov et al. 2001; Kothari 2001; Thomas and Zhang 2000; Beneish 1997; Subramanyam 1996; Dechow et al. 1995; DeFond and Jiambalvo 1994; Jones 1991).

#### 4.5.1.2.1 Jones (1991) Model

Jones (1991) argues that a firm's economic circumstances have an influence on accounting accruals and attempts to control for such effects. The study uses the change in revenues as a proxy to control for firm's economic circumstances and the level of property, plant, and equipment as a proxy to control for the effect of the depreciation.

According to the cross-sectional Jones (1991) model, discretionary accruals are estimated in two steps. The first step is to predict non-discretionary accruals for each year and industry, and all the variables are scaled by total assets at the beginning of the year (Jones 1991). The Jones model is presented in equation 4.3 as follows:

#### Equation 4-3: Non-discretionary accruals Jones (1991) model

$$TA_{jit}/A_{jit-1} = \alpha_0(1/A_{jit-1}) + \alpha_1(\Delta REV_{jit}/A_{jit-1}) + \alpha_2(PPT_{jit}/A_{jit-1}) + e_{jit}$$

where

- TA : Total accruals
- $\Delta REV$  : Change in revenues
- PPT : Gross property, plant and equipment
- A : Total assets
- j : Firm j; 1 .....N
- i : Industry i; 1 .....N
- t : Year; 1 .....N
- e : Error term

At the second stage, discretionary accruals for each firm j were calculated by deducting non-dictionary accruals from total accruals (TA) as illustrated in equation 4.1.

#### Equation 4-4: Discretionary accruals Jones (1991) model

$$DA_j = [TA_{jit}/A_{jit-1}] - [\alpha_0(1/A_{jit-1}) + \alpha_1(\Delta REV_{jit}/A_{jit-1}) + \alpha_2(PPT_{jit}/A_{jit-1}) + e_{jit}]$$

where

DA : Discretionary accruals

j : Firm j; 1 .....N

$\alpha_0$ ,  $\alpha_1$ , and  $\alpha_2$  are the predicted coefficients from equation 4.3.

#### 4.5.1.2.2 Modified Jones (Dechow et al. 1995) Model

Dechow et al. (1995) developed the original Jones model by adjusting the change in receivables (debtors) from the change in revenues (see Section 2.5.1.5 of Chapter 2).

As in the process of measuring discretionary accruals in accordance with the Jones model, two steps are conducted to estimate discretionary accruals, as suggested by Dechow et al. (1995). Firstly, non-discretionary accruals are estimated for each year and each industry group as presented in equation 4.5 as follows:

#### Equation 4-5: Non-discretionary accruals modified Jones (Dechow et al. 1995) model

$$TA_{jit}/A_{jit-1} = \alpha_0(1/A_{jit-1}) + \alpha_1(\Delta REV_{jit}/A_{jit-1} - \Delta RCE_{jit}/A_{jit}) + \alpha_2(PPT_{jit}/A_{jit-1}) + e_{jit}$$

where

TA : Total accruals

$\Delta REV$  : Change in revenues

$\Delta RCE$  : Change in receivables (debtors)

PPT : Gross property, plant and equipment

A : Total assets

j : Firm j; 1 .....N

i : Industry i; 1 .....N

t : Year; 1 .....N

e : Error term

Step two was performed to capture discretionary accruals as in equation 4.6.

#### Equation 4-6: Discretionary accruals modified Jones (Dechow et al. 1995) model

$$DA_j = [TA_{jit}/A_{jit-1}] - [\alpha_0(1/A_{jit-1}) + \alpha_1(\Delta REV_{jit}/A_{jit-1} - \Delta RCE_{jit}/A_{jit}) + \alpha_2(PPT_{jit}/A_{jit-1}) + e_{jit}]$$

where

DA : Discretionary accruals

j : firm j; 1 .....N

$\alpha_0$ ,  $\alpha_1$ , and  $\alpha_2$  are the predicted coefficients from equation 4.5.

Consistent with the previous studies of Pyo and Lee (2013); Kim et al. (2012); Gargouri et al. (2010); Sun et al. (2010); Chih et al. (2008); and Prior et al. (2008), the present study uses the residuals from equations 4.3 and 4.5 of the Jones and the modified Jones models as discretionary accruals.

Although, the original Jones and modified Jones models are applied in a discretionary-accruals time-series approach, a significant number of recent academic studies (Cohen and Zarowin 2010; Sun and Rath 2010; Iqbala et al. 2009; Chen et al. 2008; Abdul Rashidah and Ali 2006; Bergstresser and Philippon 2006; Xie et al. 2003; Kothari 2001; Teoh et al. 1998a; Teoh et al. 1998b) prefer the cross-sectional discretionary-accruals approach to the time-series approach (see Section 2.5 of Chapter 2). Following the previous studies, the present study uses the cross-sectional Jones and modified Jones models to predict discretionary accruals.

#### 4.5.1.2.3 Performance-Matched (Kothari et al. 2005) Model

Kothari et al. (2005) argue that firms' financial performance has an impact on accounting accruals and that both the Jones and modified Jones models may result in measurement errors because of the misspecification issue in estimating discretionary accruals. Therefore, they add the firms' financial performance to the

modified Jones model to control for the impact of financial performance on accounting accruals. Their study uses a lagged value of return on assets (ROA) as a proxy for firm financial performance to reduce the problem of heteroscedasticity and to avoid the problem of misspecification measurement.

Two steps were performed to measure dictionary accruals according to the performance-matched (Kothari et al. 2005) model. The first was to predict non-discretionary accruals as follows:

**Equation 4-7: Non-discretionary accruals Performance-Matched (Kothari et al. 2005) model**

$$TA_{jit}/A_{jit-1} = \alpha_0(1/A_{jit-1}) + \alpha_1(\Delta REV_{jit}/A_{jit-1} - \Delta RCE_{jit}/A_{jit}) + \alpha_2(PPT_{jit}/A_{jit-1}) + ROA + e_{jit}$$

where

TA	=	Total accruals
$\Delta REV$	=	Change in revenues
$\Delta RCE$	=	Change in receivables (debtors)
PPT	=	Gross property, plant and equipment
ROA	=	Return on assets
A	=	Total assets
j	=	Firm j; 1 .....N
i	=	Industry i; 1 .....N
t	=	Year; 1 .....N
e	=	Error term

The second was to calculate discretionary accruals as presented in equation 4.7 below.

#### Equation 4-8: Discretionary accruals Performance-Matched (Kothari et al. 2005) model

$$DA_j = [TA_{jit}/A_{jit-1}] - [\alpha_0(1/A_{jit-1}) + \alpha_1(\Delta REV_{jit}/A_{jit-1} - \Delta RCE_{jit}/A_{jit}) + \alpha_2(PPT_{jit}/A_{jit-1}) + ROA + e_{jit}]$$

where

DA = Discretionary accruals

j = firm j; 1 .....N

$\alpha_0$ ,  $\alpha_1$ , and  $\alpha_2$  are the predicted coefficients from equation 4.7.

The residuals of equation 4.7 were used as discretionary accruals.

#### 4.5.2 Measurement of CSD (Independent variable)

Following the previous studies by Hassan and Harahap (2010); and Haniffa and Cooke (2005), content analysis and the disclosure index approaches are both used in the present study to capture the level of CSD in UK companies. Haniffa and Cooke (2005) indicate that using content analysis alone cannot capture the picture and graphs, which perceived as powerful and effective methods of communicating CSR information. Therefore, the use of disclosure index and content analysis methods is a reasonable approach to capture the whole picture of CSD.

##### 4.5.2.1 Content Analysis

For the purpose of investigating the level of CSD in annual reports and CSR reports, if any, content analysis, which is defined as “a method of codifying the text (or content) of a piece of writing into various groups (or categories) depending on selected criteria” (Weber, 1990 cited in Haniffa and Cooke 2005, p. 404), is applied in the present study to capture the amount of disclosure. Several essential steps are required if content analysis is to be used in any kind of CSD, beginning with the determination of document(s) that will be used as a source of the text, and ending

with an assessment of their reliability and validity (Wolfe 1991). In this regard, Krippendorff (1980) indicates that content analysis involves at least four steps. These steps are as follows: (1) determining the document(s) to analyse; (2) determining the recoding unit; (3) determining the disclosure categories; and (4) testing the reliability and viability of the data.

#### **4.5.2.1.1 Determining the Document(s)**

At this point in the use of content analysis, a decision regarding the source(s) of the data needs to be taken (Unerman 2000). There are a variety of data resources that can be used as a sampling unit(s) for CSR; however, annual reports have employed by a significant number of CSD studies (Aribi and Gao 2012; Aribi and Gao 2010; Maali et al. 2006; Haniffa and Cooke 2005; Holland and Boon Foo 2003; Raar 2002; Zeghal and Ahmed 1990). In this regard, Gray et al. (1995b) state that “The annual report is used as a principal focus of reporting. There is some justification for this. The annual report is not only a statutory document, produced regularly, but it also represents what is probably the most important document in terms of an organisation’s construction of its own social image” (p.83). Likewise, Stanton and Stanton (2002, p.478) state that annual reports are formal public documents produced by companies as a response to the mandatory corporate requirements existing in most Western economies. Similarly, Hines (1988) indicates that the annual report is seen as the most important document in terms of the firm’s construction of its own social image. Additionally, Marston and Shrives (1991) documented that the annual report is the most comprehensive document available to the public and is thereby considered the main disclosure medium.



Although the majority of CSD literature focuses on annual reports as a main source of social information, this exclusive focus may provide an incomplete picture of all CSR practices (Roberts 1991). In this regard, Zeghal and Ahmed (1990) indicate that the annual reports are not the only channel companies can use to provide information about their social responsibility activities. Similarly, Campbell et al. (2003) state that “disclosure of social information in the annual reports represented a small proportion of a company’s total social reports” (p.566). Several studies have used documents other than annual reports. For example, Zeghal and Ahmed (1990) used corporate advertisements and brochures besides annual reports. Guthrie and Parker (1989) used half-yearly reports of the PHB company alongside annual reports, whereas Jennifer and Taylor (2007) investigated triple bottom-line reporting in annual reports, CSR reports, and website reports.

Although CSD can be made via a variety of means, using all available means would be an illogical decision. In this regard, Unerman (2000) states that any study must limit the range of documents it uses since large firms may publish a large number of documents each year; this places the researcher at risk of being overwhelmed by the number of documents, many of which may be unavailable in the corporate archive, thus making it difficult to ensure the completeness of the data.

In light of the above, it appears that the use of annual reports alone may not give a full picture of CSD; on the other hand, using all available documents would be an illogical method of investigating the level of disclosure. Therefore, the present study used both annual reports and CSR reports to investigate the level of CSD in UK companies.

#### 4.5.2.1.2 Determining the Unit of Analysis

One of the most important decisions in the process of using content analysis is to determine how to measure the data. A number of methods have been used in the literature, such as recording units in terms of words, sentences, pages, lines, proportion of pages or a mixture of these units (Aribi and Gao 2012; Aribi and Gao 2010; Parsa and Kouhy 2008; Haniffa and Hudaib 2007; Maali et al. 2006; Gao et al. 2005; Xiao et al. 2005; Holland and Boon Foo 2003; Raar 2002; Tsang 1998; Deegan and Rankin 1996; Hackston and Milne 1996; Gray et al. 1995a). However, each of these methods has both advantage(s) and disadvantage(s), which means there is no single accepted method of measuring the level of disclosure (Unerman 2000). For example, while the use of the page as a recording unit takes into account any non-narrative disclosure (e.g. photographs and charts, which are considered powerful and effective methods of communication) (Unerman 2000), the print size, column size and page size may differ from one annual report to another (Ng 1985). In the present study, word count is chosen to capture the quantity of CSD.

Although the measurement of the quantity of CSD in terms of the number of words cannot capture charts and graphics, words have the advantage of leading themselves to more exclusive analysis (Xiao et al. 2005). Moreover, Zeghal and Ahmed (1990) point out that word is the smallest unit of measurement and can be expected to provide the maximum robustness for the study in assessing the amount of disclosure. Supporting this, Campbell (2004) indicate that “it [the word] was felt that to be a robust measure in which counting errors were likely to account for a lower overall proportion of the total compared to those in sentence counting”(p.109).In

addition, Deegan and Gordon (1996) state that using words can enable the researcher to record the volume of disclosure in greater detail. In the same vein, Krippendorff (1980) indicates that words are the preferred measure when it is intended to measure the total amount of space devoted to a topic and to ascertain the importance of that topic. Furthermore, Weber (1990) suggests that a small recording unit such as a word increases the measurement reliability, while a large unit such as a page decreases the required reliability (Milne and Adler 1999).

For the purposes of the present study and similar to the previous studies by Aribi and Gao (2012); Aribi and Gao (2010); Haniffa and Cooke (2005); Xiao et al. (2005); and Campbell (2004), the number of words is used to measure the level of CSD.

#### **4.5.2.1.2.1 Selection of CSD Key Words**

Word count was used in the present study to measure the quantity of CSD. Hence, the specific CSD key words were created to be detected in companies' annual and, if any, CSR reports. The list of CSD key words was established through three steps (Hussainey et al. 2003). First, I read a sample of 50 companies' annual reports (pilot study) during a given period to identify the key words related to the main categories of CSD. This step generates a preliminary list of CSD key words. Second, synonyms for each key word were added to the preliminary list created in the first step. Finally, an additional criterion was introduced that any keyword must satisfy in order to be included in the final list (See appendix 3).

The amount for each keyword for each CSD item and company was collected and counted. The total quantity for each CSD category represents the number of key words in company's annual and, if any, CSR reports. Here, for example, is report for

the key word “Employees”, from Tesco PLC’s annual report for the financial year 2008:

Example (1): Employees Keyword

*“The average monthly number of **EMPLOYEES** (including executive directors) was: Total 25210”. (Tesco PLC, annual report 2008)*

Example (2): Employees Keyword

*“Disabled persons in **EMPLOYEES** receive equal treatment to that afforded to other **EMPLOYEES**, in line with the Group’s philosophy of equal opportunities for all employees, irrespective of race, nationality, gender, disability or age”. (Tesco PLC, annual report 2008)*

At the end of the report for each company, the total number of words which included the “Employees” key words is provided. For Tesco’s 2008 annual report, the number of words with “Employees” key word is 12 and 33 respectively. The total number of words for all keywords under each category represents the total level of CSD for the company.

#### 4.5.2.1.3 Determining the Categories

Conducting content analysis research requires a clear and accurate identification of the main categories of CSR along with further relevant subcategories that will be equally applicable to all samples of annual and CSR reports. In this regard, Tilt (2001) states that an accurate classification of CSD categories is an essential element of research design in content analysis. Although the literature does not provide a clear reference to the categories of CSD, Gray et al. (1995b, p.81) indicate four major categories to formulate the main themes of CSD. These categories, which are consistent in a significant number of CSD studies, are as follows: community, employees, natural environment, and customers.

Based on previous studies (Othman et al. 2011; Rizk et al. 2008; Hall 2002; Jennifer and Taylor 2007; Haniffa and Cooke 2002; Newson and Deegan 2002; Deegan et al. 2002; Williams and Ho Wern Pei 1999; Hackston and Milne 1996; Gray et al. 1995a), “energy”, “products and services”, “value-added statement”, and “others” are added to the main categories to encompass most of the theme and items of CSD in annual reports and CSR reports. The “others” category is added to capture any elements that represent social responsibility but fall outside the main and added categories (Gray et al. 1995b). The CSD categories were further subdivided into subcategories to capture CSD in the sample of annual and CSR reports. Before conducting a pilot study, decision rules were also established based on the previous studies by Hackston and Milne (1996); and Gray et al. (1995b) to classify which CSR items are to be disclosed under which category and subcategory.

In order to ensure that disclosure categories and subcategories are able to represent the different aspects of CSD in a sample of annual and CSR reports and to test the reliability of the disclosure measurement, a pilot study was conducted prior to the main study. The pilot study process commenced with the downloading of 50 annual reports for the period 2008-2010 (around 17 annual reports per year and 5 per industry). In the second stage of the pilot study, the annual reports were distributed to the researcher and another qualified independent researcher, who is familiar with the use of content analysis, to decide whether the categories, subcategories and decision rules fitted the sample firms.

The results of the pilot study indicated that “energy” and “added-value statements” can be included in subcategories instead of main categories. Therefore, “energy” is

added to the environmental category and “added-value statements” is added to the “others” category. The final checklist comprises 59 subcategories included within six main categories of CSD: environment (ENV), employees (EMP), community development (COM), customers (CUS), products and services (PRO), and others (OTH).

#### **4.5.2.1.4 Reliability and Validity of Disclosure Measurement**

The basic characteristic of content analysis is that data should be tested to prove that it is objective, systematic and reliable (Krippendorff 1980). According to Hayes and Krippendorff (2007), “Conclusions from such data can be trusted only after demonstrating their reliability” (p.77). Neuendorf (2002) states that content analysis’ reliability and validity has been defined as the extent to which a measuring procedure provides the same results on repeated trials. According to Aribi and Gao (2012), reliability and validity are determined to ensure that different researchers will code the text in the same way and therefore diminish the chance for inaccuracy and biases. Krippendorff (1980) identifies three types of content analysis’ reliability;

- Stability, sometimes called intra-coder reliability, refers to the ability of a judge to code data in the same way over time. For example. If the annual reports analysed by a coder and then analysed again after three or four weeks, and the coding was the same each time then the stability of content analysis would be achieved.
- Reproducibility, sometimes called inter-coder reliability, refers to that the same coding achieved when various coder are involved. The inter-coder reflects on the measurement of the extent to which coding is the same when using various

coders. High reproducibility is considered a minimum standard for content analysis.

- Accuracy refers to assessing coding performance against predetermined standards set by a panel of experts or known from previous experiments and studies.

According to Guthrie and Mathews (1985), there are no identified standards for CSD and therefore no correct performance or measure. Thus, for the purpose of this study, the reliability of content analysis will be evaluated through the reproducibility and stability. Like Aribi and Gao (2012, 2010), a number of steps were taken to ensure the reliability. In particular, it involves:

- Krippendorff (1980) points out that, in order to ensure the study's reliability and to gain a better understanding of the subject, the training of coders is important and is a common elementary task in content analysis. Therefore, the pilot study was used as a training stage beside its main objective.
- During this period of training, some practical steps were undertaken, including refining categories and subcategories, altering processes, and carefully revising sheets to ensure the reliability of the classification process in the study and to ensure that the content analysis process was being used effectively.
- It is worth mentioning that, during this period of training, any difficulties or questions in understanding and applying decision rules were written down and discussed with the researcher's colleagues, who are familiar with the use of content analysis, to ensure the existence of "shared meaning" (Gray et al. 1995b) and to enhance the reliability of the instrument used.

- To ensure the reproducibility of the study, the annual reports downloaded in the pilot study were distributed and assessed by the researcher and another independent researcher; the results were then compared. During this process, any difficulties or ambiguities were discussed and explained to ensure that the coders used the same decision rules, and any points made were used to develop the procedures of analysis.
- During the training period, some practical steps were undertaken, including refining categories and subcategories, altering processes, and carefully revising sheets to ensure the reliability of the classification process in the study and to ensure that the content analysis process was being used effectively.

In addition to the reliability of the disclosure measurement, the process of data measurement must be valid (Krippendorff 1980). In this regard, clear definitions of categories and subcategories and explicitly formulated decision rules and procedures of CSD were established and developed, as mentioned earlier. In addition, the agreement between the researcher and the other coder regarding the themes, items, and rules of analysis can be taken as a sign that the measurement procedures are valid.

#### **4.5.2.2 Disclosure Index Approach**

The CSR items were extracted from firms' annual reports and, if available, CSR reports. Like the studies of Othman et al. (2011); Rizk et al. (2008); and Haniffa and Cooke (2005), an equally-weighted dichotomous approach based on categorical coding is applied in this study to score CSD items and develop the disclosure index. According to this approach, all items included in index checklist are equally valued



regardless of their importance or relevance to any particular user group (Chau and Gray 2002; Cooke 1989a). A dichotomous procedure was conducted whereby an item of disclosure was awarded a “1” point if the item of the relevant disclosure included in the checklist was disclosed, and a “0” point if it was not disclosed. The disclosure index (CSRI) for each company is estimated as follows:

**Equation 4-9: Disclosure social index**

$$CSRI_{ji} = \frac{\sum_{j=1}^{mj} X_j}{n}$$

Where:

*CSRI* = Total level of social responsibility disclosure score.

*X* = 1 if an item is disclosed, and 0 otherwise.

*N* = Number of items.

*j* = Category *j*.

*i* = Firm *i*.

The disclosure index includes six categories: community (COM), employees (EMP), environment (ENV), customers (CUS), products/services (PRO), and others (OTH). Each category includes a number of items. Therefore, the score for each item within a particular category was added to other items in the same category and the total score for the category was then divided by the maximum number of items within the category. Afterwards, the firm’s total score was measured by adding up the scores for the six categories and then dividing by the total number of categories (i.e. 6 categories) to obtain the total score of disclosure for the firm.

### 4.5.3 Measurement of Control Variables

In addition to dependent and independent variables, a number of control variables are included in the present study based on the previous studies. The control

variables are included to control for the potential effect of corporate governance and firm-specific factors that may influence the extent of EM. Although a significant number of factors that impact the magnitude of EM have been suggested in the literature, it is difficult to control for certain factors such as management style and corporate culture because of measurement problems (Archambeault 2002). As the purpose of this study is to investigate whether CRS constrains EM in UK companies, a review of the literature revealed several factors that might influence the extent of EM. To control for the impact of corporate governance mechanisms and firm-specific effects, the control variables are divided into two groups. The first group includes the corporate governance variables while the second includes the firm-specific variables.

#### **4.5.3.1 Corporate Governance**

##### **4.5.3.1.1 The Effectiveness of the Board**

A monitoring function over managers is one of the major responsibilities of the board in order to reduce the agency cost and to ensure that managers fulfil their duties in a manner that serves the best interests of shareholders (Brennan and McDermott 2004; Fama and Jensen 1983; Fama 1980). In this regard, Fama (1980) states that boards with a majority of insider directors have weak monitoring of managers and are subject to self-monitoring. On the other hand, Lawler et al. (2002) indicate that the presence of independent directors on the board enhances the monitoring function of the board. The UK Corporate Governance Code (2010) suggests that half of the board be composed of independent directors (excluding the chairman). Thus, a higher proportion of independent directors on the board is

expected to enhance the effectiveness of the monitoring function. Furthermore, Haniffa and Cooke (2002) state that the presence of independent directors not only affects the firm's performance but also impacts the firm's disclosures by forcing the management to improve the quality of these disclosures. Beasley (1996) found that a higher proportion of independent directors on the board is negatively associated with financial statement fraud. In addition, a significant number of EM studies indicate that a higher proportion of independent directors on the board is negatively and significantly related to EM (Dimitropoulos and Asteriou 2010; Jaggi et al. 2009; Bradbury et al. 2006; Peasnell et al. 2005; Xie et al. 2003; Klein 2002; Peasnell et al. 2000a; Beasley 1996). In other words, firms with higher numbers of independent directors on the board report a lower magnitude of earnings management.

In respect of the financial expertise of directors on the board, Carcello et al. (2002); (Chtourou et al. 2001) indicate that a higher level of directorial experience on the board leads to a higher monitoring function. They argue that when the directors on the board are financial experts they can understand and address issues related to financial statements. In this regard, (Xie et al. 2003) find that firms with directors who have a corporate and financial background are less likely to engage in EM.

Based on the above and consistent with the previous studies by Zaman et al. (2011); and Ho-Young (2008), the present study measures the board of directors' effectiveness as a dummy. It takes the value "1" if more than 50 per cent of a board's members who are not on the audit committee are independent and at least the sample median of the board's directors are financial experts; otherwise, board effectiveness is equal to "0".

#### **4.5.3.1.2 The Effectiveness of the Audit Committee**

Agency theory suggests that directorial independence is an essential element in a committee's effective monitoring function (Fama and Jensen 1983). The UK Corporate Governance Code (2010: 16) indicates that all members of the audit committee should be independent. In terms of EM, several UK studies have found a negative and significant association between the independence of the audit committee and EM (Bradbury et al. 2006; Beasley 1996). Similar results were found by Davidson et al. (2005); Bédard et al. (2004); (Xie et al. 2003); and Klein (2002).

In respect of audit committee financial expertise, the UK Corporate Governance Code (2003: 16) recommended that at least one member of the audit committee have recent and relevant financial experience. The evidence of empirical studies indicates that the financial expertise of the audit committee members improves the monitoring function and the quality of the firm's financial reports (Krishnain and Visvanathan 2008; Abbott et al. 2003a; Carcello et al. 2002). In addition, Bédard et al. (2004); and Xie et al. (2003) find that firms whose audit committee members have higher financial expertise report lower EM. Therefore, following the previous studies by Zaman et al. (2011); Ho-Young (2008); and Raghunandan and Rama (2003), the current study measured audit committee effectiveness as a dummy variable, where "1" is awarded if all the members of the audit committee are independent and the number of those directors who are financial experts is at least equal to the sample median; otherwise audit committee effectiveness is awarded "0".

### **4.5.3.2 Firm-Specific Variables**

#### **4.5.3.2.1 Firm Size**

Mixed results regarding the relation between EM and firm size have been reported in previous studies (Lobo and Zhou 2006; Watts and Zimmerman 1990). Therefore, firm size can be negatively or positively associated with EM. According to Watts and Zimmerman (1990), the political cost and government scrutiny are high for larger firms; hence, these firms are more likely to engage in income-decreasing EM. Conversely, Richardson (2000) states that market pressure is greater for larger companies because they are subject to close scrutiny by investors; thus, they are more likely to adopt aggressive accounting policies which in turn causes them to engage in income-increasing EM. Recently, several empirical studies have supported the negative relationship perspective between firm size and EM (Pyo and Lee 2013; Kim et al. 2012; Hong and Andersen 2011; Yip et al. 2011; Gargouri et al. 2010; Chih et al. 2008). This perspective argues that larger firms are often required to disclose their financial information and are thus less likely to manipulate earnings. Consistent with the previous studies by Dimitropoulos and Asteriou (2010); and Jaggi et al. (2009), firm size is measured as the natural logarithm of total assets at the year-end.

#### **4.5.3.2.2 Cash Flow from Operations**

Net cash flow from operational activities is used to capture the differences in performance across firms within different industries and economic activities, and how they impact on EM. The studies by Gul et al. (2009); Lobo and Zhou (2006); and Dechow et al. (1995) find that firms with a high operational cash flow are less likely to manage earnings upwards because they are already performing well. On the other

hand, firms with a low operational cash flow are more likely to increase EM. Following the previous studies by Peasnell et al. (2005); and Becker et al. (1998), the cash flow from operations is measured as net cash flow from operations divided by the total assets.

#### **4.5.3.2.3 Financial Leverage**

Leverage represents the debt structure of a firm, and it has been used in previous literature as a proxy for debt covenant violation (Elayan et al. 2008). There are two contrasting strands of empirical evidence on the impact of financial leverage on EM. One strand of evidence indicates that firms with high financial leverage are more likely to engage in income-increasing EM (Richardson 2000; DeFond and Jiambalvo 1994; Watts and Zimmerman 1990). The justification of the positive relationship between financial leverage and EM is that firms facing financial distress or financial difficulties have an incentive to manipulate reported earnings upwards in order to avoid debt covenant valuation and increased financing costs (Watts and Zimmerman 1990). Therefore, the debt covenant valuation argument assumes a positive association between financial leverage and EM. On the other hand, Choi et al. (2013); Chih et al. (2008); Dechow and Skinner (2000); and DeFond and Jiambalvo (1994) find that firms with high financial leverage tend to manage discretionary accruals downwards. They argue that leaders may intensify the monitoring of EM, which causes the association between EM and financial leverage to be negative. Consistent with the previous studies by Jo and Kim (2007); Richardson et al. (2002); and Becker et al. (1998), financial leverage is measured in the present study by dividing long-term debt by total assets.

#### **4.5.3.2.4 Firm Performance**

Return on assets (ROA) is used in the literature as a proxy to control for a firm's financial performance (Abbott and Parker 2000). Financial performance can be negatively or positively related to EM. According to the political cost hypothesis, firms with high financial performance tend to choose accounting policies that result in a reduction in discretionary accruals to mitigate political pressure (Watts and Zimmerman 1990). In line with this argument, Skinner (2003) finds that high profitability is negatively and significantly related to EM. In contrast, Skinner finds that firms with low financial performance tend to inflate reported earnings. On the other hand, Jo and Kim (2007) find that high profitability is positively and significantly related to discretionary accruals. Following the previous studies, ROA is used in the present study to control for the impact of the firm's financial performance on EM.

#### **4.5.3.2.5 Market-to-Book Ratio**

Previous studies have used market-to-book ratio as a proxy to control for a firm's growth (Srinidhi et al. 2011; Thiruvadi and Huang 2011; Peni and Vähämaa 2010). In this regard, Chih et al. (2008) argue that firms with higher market-to-book ratios tend to manage discretionary accruals upwards because they are under the greatest pressure to adopt aggressive accounting policies to report increased earnings. In addition, Peni and Vähämaa (2010) state that firms with high growth have more opportunities to manipulate reported earnings. However, the findings on the optional impact of firm growth on EM are mixed. For example, Thiruvadi and Huang (2011); and Peni and Vähämaa (2010) find a positive relationship between market-

to-book ratio and EM, while Chih et al. (2008) find no association between them. Following the previous studies, the market-to-book ratio is used in this study to control for firm growth.

#### **4.5.3.2.6 Loss**

Loss is used in the literature as a proxy for a firm's financial condition (Peni and Vähämaa 2010). It is argued that firms facing financial problems have a strong incentive to engage in income-decreasing discretionary accruals (DeFond and Jiambalvo 1994). In this regard, Moreira and Pope (2007) indicate that firms with losses tend to engage in income-decreasing EM. This strategy is known as the "big bath" technique, which assumes that managers prefer to engage in income-decreasing earnings management when they realise that the current earnings will not achieve the earnings targets because they are so low; hence, they defer current earnings in order to use them to meet future earnings targets (Healy 1985). In line with this view, Peni and Vähämaa (2010) find a positive relationship between earnings management and loss. Consistent with the previous studies by Peni and Vähämaa (2010); and Skinner (2003), this study used loss to control for a firm's financial condition and measured it as a dummy; it is assigned a "1" if the firm's net income is negative, and "0" otherwise.

## **4.6 Empirical Research Models**

The previous studies on the association between EM and CSR provide contradictory results. While some studies have found that EM and CRS are positively related (Jiang et al. 2013; Yip et al. 2011; Heltzer 2011; Gargouri et al. 2010; Prior et al. 2008; Patten and Trompeter 2003), others have found a negative relationship between the



two variables (Pyo and Lee 2013; Choi et al. 2013; Kim et al. 2012; Hong and Andersen 2011; Chih et al. 2008); still others have found EM and CSR to be unrelated (Sun et al. 2010).

Since the existing literature has not investigated this area of accounting research in the context of the UK, apart from the study by Sun et al. (2010), who addressed the link between environmental disclosure and EM for the year 2007. The primary aim of the present study is to investigate whether or not EM and CSR are linked.

In order to support or reject the study main hypothesis (H1), the study uses the disclosure index (CSRI) in the main analyses, consistent with previous studies (Choi et al. 2013; Jiang et al. 2013; Pyo and Lee 2013; Kim et al. 2012; Yip et al. 2011; Chih et al. 2008), while the level of CSR is examined using the content analysis approach as an alternative analysis to check whether the main results are consistent and robust.

The association between CSR and EM is investigated using the following regression-specific model.

**Model:**

$$EM = \alpha_0 + \alpha_1 CSRI + \alpha_2 BRDEF + \alpha_3 AUDEF + \alpha_4 SIZE + \alpha_5 OCF + \alpha_6 LEVG + \alpha_7 ROA + \alpha_8 MB + \alpha_9 LOSS + \varepsilon$$

Where:

**Figure 4-3: variable definitions and measurements**

Label	Variable	Description
<b>Dependent Variable</b>		
<b>EM</b>	Earnings management	The obsolete value of discretionary accruals estimated using <ul style="list-style-type: none"> <li>I. Cross-sectional Jones model (JM)</li> <li>II. Cross-sectional modified Jones model (MJM)</li> <li>III. Cross-sectional performance-adjusted model (PM)</li> </ul>
<b>Independent Variable</b>		
<b>CSRI</b>	Corporate social responsibility	Total level of CSR score
<b>Control Variables</b>		
<b>BRDEF</b>	Board effectiveness	Dummy. 1 = if all the members on the board of directors are independent and at least a sample median of them are financial experts, 0 = if otherwise.
<b>AUDEF</b>	Audit committee effectiveness	Dummy. 1 = if all the members on the audit committee are independent and at least a sample median of them are financial experts, 0 = if otherwise.
<b>SIZE</b>	Firm size	The natural logarithm of total assets at the year-end
<b>OCF</b>	Cash flow from operation	Net cash flow from operation divided by the total assets.
<b>LEVG</b>	Financial leverage	Long-term debt divided by total assets
<b>ROA</b>	Return on assets	Net income divided by total assets
<b>MB</b>	Market to book	Market to book ratio
<b>LOSS</b>	Loss	Dummy. 1 = if the firm net income is negative, 0 = otherwise.

The previous model tests the association between the total level of CSR and EM. In order to provide more information on the association between the CSR and EM, a further regression-specific models to test the association between CSR sub-themes (i.e. community (COM), employee (EMP), environment (ENV), products and services (PRO, customers (CUS), and others (OTH)) and EM are developed as follows:

$$EM = \alpha_0 + \alpha_1 \text{CSRI}s + \alpha_2 \text{BRDEF} + \alpha_3 \text{AUDEF} + \alpha_4 \text{SIZE} + \alpha_5 \text{OCF} \\ + \alpha_6 \text{LEV} + \alpha_7 \text{ROA} + \alpha_8 \text{MB} + \alpha_9 \text{LOSS} + \varepsilon$$

Where:

**Figure 4-4: CSD Themes definitions and measurements**

Label	Variable	Description
<b>Dependent Variable</b>		
<b>CSRI</b> s	CSR sub-themes	Total level of CSR sub-themes scores using <ul style="list-style-type: none"> <li>i. COM: Total level of community sub-score</li> <li>ii. EMP: Total level of employee sub-score</li> <li>iii. ENV: Total level of environment sub-score</li> <li>iv. PRO: Total level of products and services sub-score</li> <li>v. CUS: Total level of customer sub-score</li> <li>vi. OTH: Total level of others sub-score</li> </ul>

## 4.7 Empirical Procedures of Data Analysis

This section discusses the process of data analysis. This process includes preliminary analysis, multivariate analysis and robustness checks. Each of these phases is outlined below.

### 4.7.1 Preliminary Analysis

Preliminary analysis of the data includes descriptive statistics, univariate analysis and correlation matrix. Descriptive statistics describe the data in terms of central tendency and shape of distribution on a single variable in an organised form. Central tendency tests include the mean, median, standard deviation, minimum and maximum, while the shape of distribution includes the skewness and kurtosis tests. In particular, while skewness measures the symmetry of distribution, kurtosis tests the peakedness (flatness) of distribution. Both measures are used to test for the

normality of data distribution. According to Abdul Rashidah and Ali (2006); and Haniffa and Hudaib (2006), a normal distribution of the data requires that the standard of skewness and kurtosis are  $\pm 1.96$  and  $\pm 2$  respectively. In addition to descriptive statistics, univariate analysis is performed to test whether the mean value is significantly different from zero for firms that engage in high EM compared with those that engage in low EM.

The correlation between sample variables is made by pairwise correlation matrix to explain the degree of linear relationship between two variables. The correlation coefficient is in a range between -1 to +1, where  $\pm 1$  correlation refers to a perfect linear relationship between variables. According to Gujarati (2003), a higher degree of correlation coefficient between independent variables may affect the results of regression analysis because of the multicollinearity problem, and the study recommends  $\pm 80\%$  or above as the beginning of the multicollinearity, which affects the regression results.

#### **4.7.2 Multivariate Analysis**

##### **4.7.2.1 Regression Analysis**

Statistical multivariate data analysis methods can be classified, in general, under two broad categories: the parametric and non-parametric methods. However, the nature and characteristics of the data determine which method should be applied. Therefore, Gujarati (2003) suggests five fundamental assumptions to be tested before choosing the multivariate analysis model. These assumptions include the following:

1. Normality: This assumption requires that the data be normally distributed.
2. Linearity: This assumption suggests that the relationship between dependent and independent variables should be linear.
3. Independence: Under this assumption, the error term of one observation should not be correlated with the error terms of other observations.
4. Heteroscedasticity: This assumption requires that the variance of the dependent variable be constant.
5. Multicollinearity: This assumption suggests that the collinearity among independent variables should not exist.

The above assumptions are checked using several tests to determine which approach (i.e. the parametric and non-parametric methods) is more appropriate for the study data. First, Skewness and Kurtosis tests are applied to check for the normality. Second, the Quantile–Quantile (Q-Q plot) test is used to test for linearity. Third, the Variance Inflation Factor (VIF) test is used to test for independency and multicollinearity. Fourth, the Breusch-Pagan/Cook-Weisberg and White’s general tests are used to check for heteroscedasticity.

The results of Ordinary Least Squares (OLS) will generate inconsistent and biased, when these assumptions are violated (Gujarati 2003). However, several regression estimators, such as OLS with robust standard error, weighted least square regression (Generalised Least Squares (GLS)), and robust regression provide an alternative to OLS regression when the assumptions have been violated (Judge et al. 1985). In the presence of heteroscedasticity, and autocorrelation, either the least square estimator with robust standard error (Huber-White standard errors) or GLS

regressions are able to reweight the error variance and thus to correct heteroscedasticity and autocorrelation (Gujarati 2003).

In general, the present study finds that most of the OLS assumptions are not adequately fulfilled, even though several steps (e.g. data transformation) have been taken to conform to these assumptions. In this regard, Glass et al. (1972) indicate that mild violations of the OLS assumptions are robust and unaffected in many situations. Thus, pooled OLS regression is performed in the main analyses while additional tests using least square estimator with robust standard is used in the sensitivity analysis as an alternative estimator.

#### **4.7.3 Further Analyses and Robustness Checks**

The purpose of further and sensitive analyses is to ensure that the main results are robust to various measurements and estimators. While the aim of further analyses is to control for the potential effect of the direction of discretionary accruals and the type of industry in which a firm operates on the main findings, the robustness checks aim to ensure that the main results are robust to various measurements and estimators as well as to control for endogeneity.

## 4.8 Summary

This chapter provides the justifications for the study methods in accordance with the study objectives and research questions. In an attempt to provide evidence on the impact of CSR on EM in UK companies, the process of data analysis is performed using the pooled OLS regression models to examine the study hypotheses. The 515 (FTSE 350 Index) company-year observations are drawn for the period 2008-2010.

The next two chapters, chapter five and chapter six, will highlight and analyse EM and CSR practices in UK companies respectively. Chapter seven will then analyse and discuss the findings on the association between CSR and EM in UK companies.

## **Chapter Five**

### **EM Practices in the UK: A General Description**

#### **5.1 Introduction**

This chapter aims to examine EM practices in UK companies. It starts by explaining the descriptive statistics for all variables used to estimate discretionary accruals. Section 5.3 discusses the findings of EM models, and section 5.4 discusses the results of univariate analysis regarding the level and direction of EM. Section 5.5 discusses the chapter summary.

#### **5.2 Descriptive Statistics**

As explained in the previous chapter, three different models (i.e. Jones (JM), modified Jones (MJM), and performance-matched (PM) models) are applied in the present study to estimate discretionary accruals. While total accruals (TA) is used as the dependent variable, change in revenues ( $\Delta REV$ ), change in receivables ( $\Delta REC$ ), property, plant and equipment (PPT), and return on assets (ROA) are the independent variables. A cross-sectional approach is adopted to estimate discretionary accruals in the three models. This approach is based on year and type of industry classification to predict discretionary accruals. Therefore, the descriptive statistics for each variable included in the three models presented in the following tables are based on year and type of industry, scaled for the period from 2008 to 2010. Given that the variables are scaled by total assets at the beginning of the year, the values of these variables can be interpreted as percentages of total assets.



### 5.2.1 Total Accruals (TA)

TA is used in the three aforementioned models as a dependent variable. Table 5.1 shows that the mean value of TA for the full sample during a given period is (-0.059), while the minimum and maximum values are (-0.814) and (0.494) respectively. Since TA is calculated as the difference between earnings before extraordinary and abnormal items (EBXA) and operating cash flow (OCF) divided by total assets (see Section 4.5.1.1 of Chapter 4), the results suggest that the mean value of EBXA is less than OCF by (-0.059). It can also be seen that the mean value of TA across years and industries is negative, suggesting that, on average, the EBXA are lower than OCF. Based on the year scaled, the highest average of TA is (-0.051) in 2010, while the lowest value is (-0.072) in 2009. These results indicate either that OCF in 2010 is less than OCF in 2009 or that the EBXA in 2010 is higher than its counterpart in 2009. Comparing the average of TA based on type of industry, Table 5.1 shows that the Technology industry has the highest average with (-0.040) compared with other industries, while the Media sector has the lowest average with (-0.115). In addition, Table 5.1 shows that the minimum value is (-0.814) in 2008 and the maximum is (0.494) in 2010, while the minimum and maximum values of TA are (-0.814) and (0.494) for the Media and Personal & Household Goods industries respectively.

**Table 5-1: Descriptive Statistics by Year and Industry Scaled for Total Accruals (TA)**

Total Accruals (TA)	Mean	Min	P50	Max	Sd.
<b>Full sample</b>	-0.059	-0.814	-0.052	0.494	0.081
<b>Year</b>					
2008	-0.055	-0.814	-0.044	0.298	0.094
2009	-0.072	-0.394	-0.062	0.131	0.072
2010	-0.051	-0.278	-0.051	0.494	0.073
<b>Industry</b>					
Oil & Gas	-0.048	-0.272	-0.054	0.298	0.095
Industrial Goods & Services	-0.059	-0.394	-0.048	0.093	0.063
Food & Beverage	-0.045	-0.183	-0.041	0.042	0.051
Personal & Household Goods	-0.056	-0.342	-0.040	0.494	0.138
Health Care	-0.047	-0.134	-0.046	0.016	0.038
Retail	-0.057	-0.278	-0.055	0.131	0.070
Media	-0.115	-0.814	-0.076	0.074	0.159
Travel & Leisure	-0.062	-0.213	-0.061	0.060	0.048
Telecommunications	-0.102	-0.270	-0.108	0.167	0.093
Technology	-0.040	-0.175	-0.043	0.103	0.060
<i>Total accruals = [Earnings before extraordinary and abnormal items (EBXA) - Operating cash flow (OCF)]/Total assets</i>					

### 5.2.2 Change in Revenue ( $\Delta$ REV)

$\Delta$ REV is an independent variable used in the three models. Table 5.2 shows that the average value of  $\Delta$ REV for the full sample and a given period is (0.077), indicating that the average value of  $\Delta$ REV is increased by (0.077). The minimum and maximum values are (-1.763) and (0.877) respectively. Based on the year scaled, Table 5.2 reports that the highest value of  $\Delta$ REV is (0.122) in the year 2008 and the lowest is (0.048) in 2009, suggesting that the average  $\Delta$ REV is increased by (0.122) in 2008 and by (0.048) in 2009. Table 5.2 also shows that, on average, revenues increase by (0.061) in 2010. Comparing  $\Delta$ REV across industries, the highest average is (0.112) in the Telecommunications sector and the lowest is (0.031) for Personal & Household Goods. Across years and industries, the minimum value is (-1.763) in the year 2008 for the Oil & Gas industry, while the maximum is (0.877) in the year 2009 for the Personal & Household Goods sector.

**Table 5-2: Descriptive Statistics by Year and Industry Scaled for Change in Revenue ( $\Delta REV$ )**

Total Accruals (TA)	Mean	Min	P50	Max	Sd.
<b>Full sample</b>	0.077	-1.763	0.068	0.877	0.188
<b>Year</b>					
2008	0.122	-1.763	0.105	0.733	0.225
2009	0.048	-0.757	0.056	0.877	0.195
2010	0.061	-0.351	0.044	0.692	0.125
<b>Industry</b>					
Oil & Gas	0.052	-1.763	0.042	0.733	0.333
Industrial Goods & Services	0.072	-0.757	0.088	0.651	0.179
Food & Beverage	0.088	-0.117	0.070	0.368	0.103
Personal & Household Goods	0.031	-0.555	0.025	0.877	0.271
Health Care	0.091	0.001	0.095	0.340	0.072
Retail	0.096	-0.523	0.080	0.600	0.159
Media	0.041	-0.187	0.043	0.387	0.130
Travel & Leisure	0.098	-0.242	0.041	0.764	0.177
Telecommunications	0.112	-0.036	0.032	0.613	0.171
Technology	0.086	-0.351	0.099	0.309	0.126
<i>Change in revenue (<math>\Delta REV</math>) = <math>[Revenue_t - Revenue_{t-1}] / Total\ assets</math></i>					

### 5.2.3 Change in Receivables ( $\Delta RCE$ )

$\Delta RCE$  is deducted from  $\Delta REV$ , ( $\Delta REV - \Delta RCE$ ), when applying MJM and PM models to predict non-discretionary accruals. As can be noted from Table 5.3, the average value of  $\Delta RCE$  for a given period and industry is almost positive, except for the year 2009. The average for the full sample is (0.012), indicating that, on average,  $\Delta RCE$  is increased by (0.012) during the period. The minimum and maximum values are (-0.263) and (0.846) respectively. Table 5.3 also shows that the highest average of  $\Delta RCE$  is (0.027) in the year 2008 and the lowest is (-0.004) in 2009. These findings indicate that the average  $\Delta RCE$  in 2008 is higher than its counterpart value in 2007 and has increased by (0.027), while in 2009 it is lower than its counterpart in 2008 and has decreased by approximately (-0.004). By comparing the lowest and the highest values of  $\Delta RCE$  based on industry, it can be seen that the lowest average value is (0.002) for the Telecommunications sector, while the highest is (0.026) for

the Retail industry. This indicates that the average  $\Delta RCE$  in Telecommunications is lower than the average  $\Delta RCE$  in the Retail industry.

**Table 5-3: Descriptive Statistics by Year and Industry Scaled for Change in Receivables ( $\Delta REC$ )**

Total Accruals (TA)	Mean	Min	P50	Max	Sd.
<b>Full sample</b>	0.012	-0.263	0.005	0.846	0.058
<b>Year</b>					
2008	0.027	-0.136	0.019	0.312	0.047
2009	-0.004	-0.263	-0.005	0.846	0.081
2010	0.012	-0.092	0.005	0.142	0.031
<b>Industry</b>					
Oil & Gas	0.017	-0.136	0.012	0.134	0.048
Industrial Goods & Services	0.007	-0.224	0.011	0.120	0.049
Food & Beverage	0.007	-0.092	0.009	0.060	0.027
Personal & Household Goods	0.007	-0.063	0.001	0.183	0.038
Health Care	0.018	-0.025	0.019	0.068	0.024
Retail	0.026	-0.263	0.005	0.846	0.114
Media	0.005	-0.094	0.003	0.142	0.047
Travel & Leisure	0.005	-0.049	0.001	0.274	0.039
Telecommunications	0.002	-0.028	0.003	0.039	0.018
Technology	0.021	-0.063	0.021	0.113	0.039
<b>Change in revenue (<math>\Delta REC</math>) = <math>[Receivable_t - Receivable_{t-1}] / Total\ assets</math></b>					

#### 5.2.4 Gross Property, Plant and Equipment (PPT)

PPT is an independent variable included in the three models to control for the effect of depreciation, depletion and amortisation (Jones 1991). In general, the average value of PPT for the full sample is (0.467) during the period from 2008 to 2010. The minimum value is (0.004), while the maximum is (0.737), indicating that the range of PPT is between (0.004) and (0.737) of total assets at the beginning of the year. Based on the year scaled, Table 5.4 shows that the highest average of PPT is (0.494) and the lowest is (0.451) in the years 2009 and 2008 respectively. It ranges between (0.004) and (0.737) during the period 2008-2010. Based on the industry scaled, the highest value is (0.949) in the Telecommunications sector, while the lowest is (0.057) for Personal & Household Goods.

**Table 5-4: Descriptive Statistics by Year and Industry Scaled for Gross Property, Plant and Equipment (PPT)**

Total Accruals (TA)	Mean	Min	P50	Max	Sd.
<b>Full sample</b>	0.467	0.004	0.346	0.737	0.403
<b>Year</b>					
2008	0.451	0.004	0.315	0.469	0.390
2009	0.494	0.004	0.366	0.737	0.449
2010	0.455	0.004	0.355	0.456	0.367
<b>Industry</b>					
Oil & Gas	0.592	0.060	0.675	0.307	0.339
Industrial Goods & Services	0.455	0.086	0.299	0.403	0.338
Food & Beverage	0.567	0.183	0.481	0.568	0.342
Personal & Household Goods	0.057	0.004	0.028	0.240	0.067
Health Care	0.258	0.048	0.263	0.518	0.171
Retail	0.641	0.138	0.587	0.456	0.327
Media	0.134	0.025	0.093	0.422	0.127
Travel & Leisure	0.673	0.088	0.700	0.433	0.360
Telecommunications	0.949	0.047	0.527	0.737	0.945
Technology	0.202	0.020	0.103	0.134	0.258

### 5.2.5 Return on Assets (ROA)

ROA is used as an independent variable in the PM model to control for the impact of the firm's financial performance. Table 5.5 shows that the average ROA for the full sample is (0.083) and ranges from (-0.544) to (0.751). It also shows that the highest average of ROA is (0.089) during 2008 and the lowest is (0.077) in 2009, suggesting that the firms' highest financial performance is in 2008 compared with the other years. The minimum and maximum values range from (-0.544) to (0.751) during a given period. Based on the industry scaled, the lowest value is (0.044) in Personal & Household Goods and the highest is (0.109) in the Technology sector. The minimum value of ROA is (-0.554) in the Media industry and the maximum value is (0.751) in Industrial Goods & Services.

**Table 5-5: Descriptive Statistics by Year and Industry Scaled for Return on Assets (ROA)**

Total Accruals (TA)	Mean	Min	P50	Max	Sd.
<b>Full sample</b>	0.083	-0.544	0.074	0.751	0.098
<b>Year</b>					
2008	0.089	-0.544	0.083	0.658	0.117
2009	0.077	-0.105	0.065	0.751	0.105
2010	0.083	-0.165	0.071	0.374	0.067
<b>Industry</b>					
Oil & Gas	0.076	-0.165	0.072	0.462	0.109
Industrial Goods & Services	0.084	-0.131	0.077	0.751	0.085
Food & Beverage	0.073	-0.067	0.075	0.197	0.050
Personal & Household Goods	0.044	-0.248	0.051	0.248	0.101
Health Care	0.087	-0.063	0.087	0.158	0.053
Retail	0.086	-0.172	0.084	0.556	0.090
Media	0.088	-0.544	0.047	0.658	0.216
Travel & Leisure	0.092	-0.015	0.067	0.473	0.097
Telecommunications	0.076	-0.156	0.070	0.184	0.085
Technology	0.109	-0.012	0.092	0.310	0.081
<i>Return on assets (ROA)= Net income / total assets</i>					

### 5.3 Analysis of EM

Following the previous studies by Dechow et al. (2012); Kothari et al. (2005); Dechow et al. (1995); and Jones (1991), this section evaluates EM models in two different ways: i) exploring each independent variable and identifying which variable makes a significant contribution to the model; and ii) comparing the explanatory power by looking for adjusted  $R^2$ . These tests are performed to determine which model is more appropriate for detecting EM in terms of the study data. In doing so, EM models are applied on the full sample during a given period.

In respect of independent variables, a variable makes a strong contribution to the dependent variable when it has the largest coefficient value. In addition, a variable makes a significant contribution when it has a significance value of less than 0.05 or 0.01 (Pallant 2007, p.159). Table 5.6 shows that the highest coefficient is for the variable  $\Delta\text{REV}-\Delta\text{REC}/A$  in both MJM and PM; however, the coefficient of the same

variable is highest in PM compared with MJM. These findings are consistent with the previous study by (Peasnell et al. 2000b). In contrast, PPT is the weakest variable across the three models. Table 5.6 reveals that almost all independent variables are significantly related to TA at less than the 0.01 level, except for  $1/A$  and  $\Delta REV/A$  in the JM model. Overall, Table 6.5 reports that the PM model predicts the highest coefficients of independent variables compared with the JM and MJM models.

With regard to the explanatory power, Table 5.6 shows that the Adjusted  $R^2$  has explanatory power of approximately (29, 31 and 35 per cent) for JM, MJM and PM respectively. These results indicate that PM has the highest explanatory power compared to the other models.

Based on the above, it can be concluded that the PM has the highest predictors and explanatory power compared with the other models. Hence, the PM model will be used as the primary model to estimate discretionary accruals in the present study.

**Table 5-6: Regression Estimations of Jones, Modified Jones, and Performance-Matched Models for the Full Sample**

TA	Jones model (JM)	Modified Jones model (MJM)	Performance-matched model (PM)
1/A	-1.280 -1.213	-4.597 -3.139***	-8.565 -5.522***
ΔREV/A	0.014 0.718		
ΔREV-ΔREC/A		11.964 3.294***	14.891 4.211***
PPT	-0.087 -13.799***	-0.081 -12.945***	-0.096 -14.589***
ROA			0.223 6.319***
R <sup>2</sup>	0.30	0.31	0.35
Adj-R <sup>2</sup>	0.29	0.31	0.35
F-Stat.	75.03***	79.92***	72.20***

ΔREV= Change in revenues, ΔREC= Change in receivables, PPT= Gross property, plant and equipment, ROA= Return on assets, and A= total assets at the beginning of the year.

JM=  $TA_{jit}/A_{jit-1} = \alpha_0(1/A_{jit-1}) + \alpha_1(\Delta REV_{jit}/A_{jit-1}) + \alpha_2(PPT_{jit}/A_{jit-1}) + e_{jit}$

MJM=  $TA_{jit}/A_{jit-1} = \alpha_0(1/A_{jit-1}) + \alpha_1(\Delta REV_{jit}/A_{jit-1} - \Delta RCE_{jit}/A_{jit}) + \alpha_2(PPT_{jit}/A_{jit-1}) + e_{jit}$

PM=  $TA_{jit}/A_{jit-1} = \alpha_0(1/A_{jit-1}) + \alpha_1(\Delta REV_{jit}/A_{jit-1} - \Delta RCE_{jit}/A_{jit}) + \alpha_2(PPT_{jit}/A_{jit-1}) + ROA_{ji-t} + e_{jit}$

\* \*\*and \*\*\* donate significant at 0.10, 0.05, and 0.01

## 5.4 Univariate Analysis of EM

### 5.4.1 Univariate Analyses of the Level of EM

The section investigates whether the level of discretionary accruals differs significantly through the years from 2008 to 2010 using the three EM models (i.e. JM, MJM, and MP models). In doing so, the pooled sample is divided into two subsets of data according to the absolute discretionary accruals yearly cross-sectional median. The first group comprises firms that have discretionary accruals above the median, and the data set is identified as “High EM”. Meanwhile, the second data set comprises firms with discretionary accruals below the median and is identified as “Low EM”. The t-test is performed to examine whether or not the mean values of High EM and Low EM firms are significantly different from zero in a given period.



The results of univariate analysis comparing the discretionary accruals of High EM and Low EM companies are presented in Table 5.7. While column two presents the means of High and Low EM firms in 2008 using the three EM models, columns three and four illustrate the means of the two groups in 2009 and 2010 respectively. In general, the means of the two subsets are insignificantly different from zero across the three years and the models.

Although the differences between the means across the years and models are statically insignificant, Table 5.7 reveals that the high value of EM, in average, for the two subsets is in 2008 compared with 2009 and 2010. As can be seen in Table 5.7, the highest level of EM for the high EM subset, for example, is in 2008 across the models. Similar results are noticed for the low EM group. Since the year 2008 has been considered by the economists as the year of global financial crisis due to the collapse of large financial intuitions, these results may reflect the impact of the global financial crisis on the level of EM. It has argued that during the economic crisis, firms engage either in a high levels of EM (Rolland and dirigé 2013; Berndt and Dipl-Kfm. 2011). These results are consistent with the previous study of Berndt and Dipl-Kfm. (2011) who examine EM practice during the period of 2007-2008 using multinational data and find that firms manage earnings more aggressively during financial crises in order to achieve earnings targets.

In light of the above, the results of univariate tests indicate that managers have an incentive to engage in a high level of discretionary accruals to manipulate reported earnings, although these levels are insignificantly different from zero across years and models.

**Table 5-7: Univariate Test of EM Level (High and Low)**

Models	2008	2009	2010	2008-2009		2008-2010		2009-2010	
				Difference in mean	T-test	Difference in mean	T-test	Difference in mean	T-test
<b>JM</b>									
High (Mean)	0.078	0.068	0.061	0.010	1.988	0.017	1.988	0.007	1.988
Low (Mean)	0.011	0.010	0.009	0.001	1.988	0.002	1.988	0.001	1.988
<b>MJM</b>									
High (Mean)	0.078	0.068	0.061	0.010	1.989	0.017	1.989	0.007	1.989
Low (Mean)	0.011	0.010	0.009	0.001	1.988	0.002	1.988	0.001	1.988
<b>PM</b>									
High (Mean)	0.078	0.072	0.067	0.006	1.989	0.011	1.989	0.005	1.989
Low (Mean)	0.058	0.050	0.046	0.008	1.988	0.012	1.988	0.004	1.988

#### 5.4.2 Univariate Analysis of the Direction of EM

Although the previous section provides a summary of whether High and Low EM subsets differ significantly across years using JM, MJM and PM models, it does not explain whether the direction of EM is income-increasing (positive) or income-decreasing (negative). Hence, this section examines whether the direction of discretionary accruals differs significantly between positive and negative discretionary accruals. In doing so, the full sample is divided into two subsets according to the direction of discretionary accruals (i.e. positive and negative). A company is deemed an positive EM firm if the discretionary accruals of this firm has a positive sign, while it is deemed an negative EM firm if the sign of its discretionary accruals is negative. A univariate test is performed using a t-test to determine whether the means of positive and negative discretionary accruals firms differ significantly across years.

In general, Table 5.8 reveals that the means of positive are insignificant deferent across years and models. As can be seen from table 5.8, the results reveal that firms engage in high level of either income-increasing or income-decreasing in 2008 comparing with 2009 and 2010. These results suggest that firms which engage in income-increasing EM during 2008 have a lower level of discretionary accruals in subsequent years, while firms that tend to engage in income-decreasing EM during 2008 have a higher level of discretionary accruals in following years. Taking the 2008 financial crisis into account, it can be interpreted that firms that manage their accruals upwards during the financial crisis tend to decrease the level of discretionary accruals in the years following the crisis period. On the other hand,

firms that practise income-decreasing EM during periods of financial crisis tend to increase their discretionary accruals in subsequent years. These results support the findings of the previous studies (see Section 5.4.1 of this Chapter). On the other hand, firms that realise they cannot achieve earnings targets tend to manage earnings downwards. In this regard, Habib et al. (2013) find that, during the period of the global financial crisis, managers of distressed firms engage more in income-decreasing EM practices compared to their counterparts in healthy firms.

**Table 5-8: Univariate Test of EM Direction (Incme-Increasing And Income-Decreasing) by Year Scaled**

Models	2008	2009	2010	2008-2009		2008-2010		2009-2010	
				Difference in mean	T-test	Difference in mean	T-test	Difference in mean	T-test
<b>JM</b>									
Income-increasing (Mean)	0.039	0.033	0.030	0.006	1.989	0.009	1.989	0.003	1.989
Income-decreasing (Mean)	-0.049	-0.046	-0.037	-0.003	1.987	-0.012	1.987	-0.009	1.987
<b>MJM</b>									
Income-increasing (Mean)	0.037	0.033	0.030	0.004	1.988	0.007	1.988	0.003	1.988
Income-decreasing (Mean)	-0.049	-0.044	-0.042	-0.005	1.988	-0.007	1.988	-0.002	1.988
<b>PM</b>									
Income-increasing (Mean)	0.058	0.050	0.046	0.008	1.988	0.012	1.988	0.004	1.988
Income-decreasing (Mean)	-0.044	-0.039	-0.037	-0.005	1.974	-0.007	1.974	-0.002	1.974

## 5.5 Summary

This chapter describes a set of EM variables based on year and industry scaled for 515 UK firms during the period 2008-2010. In order to identify the most suitable model for detecting EM in terms of the study data, three EM models frequently described in the literature are evaluated. These models are the JM, MJM and PM models.

Based on OLS regression, the PM model has the highest predictors and explanatory power compared to the other two models. Hence, it is used as the primary model to detect EM in the present study. Furthermore, the results indicate that the MJM model has a higher explanatory power than the JM. Thus, it is applied as an alternative measurement of EM in the sensitive and additional analyses of the association between corporate social responsibility and earnings management.

The univariate analysis reveals that the mean difference between high and low EM is insignificant across years. It also shows an insignificant difference between the means in income-increasing and income-decreasing groups across years. These findings suggest that managers in UK companies have incentives to manage earnings at both high and low levels as well as in both upwards and downwards directions.

## **Chapter Six**

### **CSD Practices in the UK: A General Description**

#### **6.1 Introduction**

This chapter investigates CSD practices in UK companies over a three-year period from 2008 to 2010 using content analysis and disclosure index approaches. It is structured as follows. Section 6.2 discusses and analyses CSD in terms of number of firms. Section 6.3 presents the findings of CSD in terms of number of words, while section 6.4 addresses the results of CSD scores. Section 6.5 discusses the extent of CSD in different industries, and section 6.6 presents the summary.

#### **6.2 CSD - Number of Companies**

Table 6.1 presents information on the number and percentage of firms making at least one disclosure in their annual reports during the period 2008-2010, based on six categories: community (COM), employees (EMP), environment (ENV), products and services (PRO), customers (CUS), and others (OTH).

Table 6.1 shows that more firms are interested in EMP-related information than with other categories. In addition, it reveals that firms are more concerned about COM, ENV and PRO but are less concerned about CUS and OTH. These results are consistent with the study by Momin (2006), who found that 100 per cent of UK firms make disclosures on human resources. In addition, Momin (2006) found that 97 per cent of UK firms make disclosures on community information and that 89 per cent of companies provide information related to environmental issues. In respect of other countries, Hackston and Milne (1996) find that a higher number of New Zealand

firms make disclosures on human resources, while their second most important concern is the community. Likewise, Haniffa and Cooke (2005) find that a higher number of Malaysian firms make disclosures on employees.

**Table 6-1: CSD by Number of Companies**

Category/ Year	2008		2009		2010		2008-2010	
	No.	%	No.	%	No.	%	No.	%
<b>No. Companies</b>	<b>172</b>	<b>33%</b>	<b>166</b>	<b>32%</b>	<b>177</b>	<b>34%</b>	<b>515</b>	<b>100%</b>
COM	165	96%	164	99%	167	91%	<b>496</b>	<b>96%</b>
EMP	169	98%	163	98%	169	92%	<b>501</b>	<b>97%</b>
ENV	148	86%	145	87%	157	86%	<b>450</b>	<b>87%</b>
PRO	136	79%	129	78%	139	76%	<b>404</b>	<b>78%</b>
CUS	100	58%	86	52%	91	50%	<b>277</b>	<b>54%</b>
OTH	101	59%	129	78%	142	78%	<b>372</b>	<b>72%</b>

*Note: COM= Community, EMP= Employees; ENV= Environment; PRO= Products & Services; CUS= Customer; and OTH= Others*

In respect of the number of firms producing CSR reports, Table 6.2 shows that a majority of firms did not produce CSD reports. As can be seen from Table 6.2, 137 (80 per cent), 129 (78 per cent), and 138 (78 per cent) firms did not produce CSR reports during the years 2008, 2009 and 2010 respectively. For the whole sample, 404 (78 per cent) firms did not produce such reports. Conversely, Table 6.2 reveals that 35 firms (20 per cent) in 2008, 37 (22 per cent) in 2009, and 39 (22 per cent) in 2010 produced CSR reports. In general, 111 (22 per cent) firms in the sample provided such reports. These figures are lower than those obtained by Holland and Boon Foo (2003), who found that 53 per cent of UK companies produced such reports.



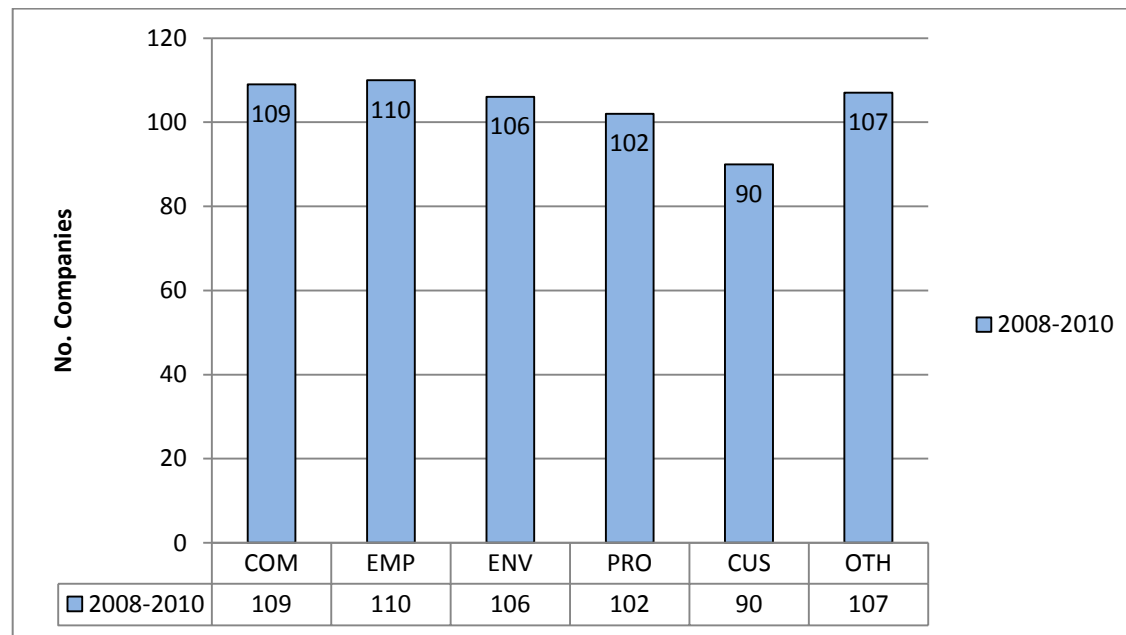
A possible explanation for these results is the fact that all the companies belonging to regulated, mining and financial industries have been removed from the study sample. This elimination may reduce the number of firms likely to produce CSR reports.

**Table 6-2: CSD by Number of CSR Reports**

Year	2008		2009		2010		2008-2010	
Full sample	<b>172</b>		<b>166</b>		<b>177</b>		<b>515</b>	
CSR reports	No.	%	No.	%	No.	%	No.	%
1	35	20%	37	22%	39	22%	111	22%
0	137	80%	129	78%	138	78%	404	78%
<i>Note: 1 a firm produces CSR report; 0 otherwise.</i>								

Regarding the number of companies in terms of CSD themes, the results in Figure 6.1 reveal that a higher number of companies that produce CSR reports are more interested in EMP and COM information (110 and 109 firms respectively). Figure 6.1 also shows that firms are more concerned about OTH, EVN and PRO than about CUS information.

**Figure 6-1: CSR Reports by Number of Companies**



In light of the above, it can be concluded that a higher number of UK companies are more concerned about providing information regarding EMP. The companies are also concerned about COM, ENV and PRO information. However, information related to CUS and OTH was of less concern in terms of the number of companies.

### **6.3 CSD - Number of Words**

Content analysis is used to measure the level of CSD in annual and CSR reports in terms of the number of words over the three years from 2008 to 2010. As seen in Table 6.3, the EMP-related information is the most important CSD information, with 332,986 (33 per cent) words during the given period. It had 102,369 (32 per cent) words in 2008, increasing slightly to 113,008 (33 per cent) in 2009, and to 118,609 (33 per cent) in 2010. These results are consistent with the previous studies by Haniffa and Hudaib (2004); Hackston and Milne (1996); and Andrew et al. (1989), who find that the most popular area of CSD is related to human resources. According to Andrew et al. (1989), the drive to disclose EMP information is attributed to

government concern about improving working conditions and standard of living. Table 6.3 also shows that the second most important theme of CSD is COM, with 277,993 (27 per cent) words. The third and fourth categories are ENV and OTH, with 160,932 (16 per cent) and 128,477 (13 per cent) words respectively. In addition, there are clearly fewer words related to PRO and CUS.

Overall, the findings on the level of CSD are consistent with the previous study by Guthrie and Parker (1990), who find that EMP and COM involvements are the most popular areas of CSD in the UK, US and Australia, with 40 and 31 per cent of disclosures respectively. They also find that ENV is the third most important area of CSD with 13 per cent. Energy and others have the lowest priorities with 7 and 2 per cent respectively. Likewise, Hackston and Milne (1996) find that EMP-related information is the most popular area of CSD in New Zealand companies. Similarly, Rizk et al. (2008) find that EMP involvement is the most popular area in Egyptian companies. Similar results were found by Sobhani et al. (2009), who investigate social reporting in Bangladeshi companies and find that EMP is the most important area of CSD. Likewise, Haron et al. (2004) examine the level of CSD in Malaysian companies for the years 1996, 1998 and 2000, and find that the EMP theme receives the highest level of disclosure.

**Table 6-3: Total Number of Words in Annual and CSR Reports**

Category/Year	2008		2009		2010		2008-2010	
	NO. words	%	NO. words	%	NO. words	%	NO. words	%
COM	86,357	27%	94,355	28%	97,281	27%	<b>277,993</b>	<b>27%</b>
EMP	102,369	32%	112,008	33%	118,609	33%	<b>332,986</b>	<b>33%</b>
ENV	55,052	17%	57,251	17%	59,186	16%	<b>160,932</b>	<b>16%</b>
PRO	23,584	7%	25,639	7%	28,446	8%	<b>77,669</b>	<b>8%</b>
CUS	14,356	5%	15,262	4%	15,507	4%	<b>45,125</b>	<b>4%</b>
OTH	34,859	11%	38,243	11%	44,818	12%	<b>128,477</b>	<b>13%</b>
<b>TOTAL</b>	<b>316,577</b>	<b>100%</b>	<b>342,758</b>	<b>100%</b>	<b>36,3847</b>	<b>100%</b>	<b>1,023,182</b>	<b>100%</b>

*COM= Community, EMP= Employees; ENV= Environment; PRO= Products & Services; CUS= Customer; and OTH= Others*

## 6.4 CSD Score

In addition to the content analysis approach, the disclosure index approach is also used in this study to examine the level of CSD in UK companies. This section discusses the extent of CSD in terms of scores. Table 6.4 provides descriptive statistics on CSD scores in annual and CSR reports over the period 2008-2010. As can be seen from Table 6.4, CSD scores range from a minimum of 0.101 for the CUS theme in 2010 to a maximum of 1 across themes and years. These results suggest that at least 10 per cent of CUS items are disclosed in 2010, while the highest CSD score is when 100 per cent of disclosure items are disclosed. In line with the findings of content analysis, Table 6.4 shows that the highest average CSD score is 0.667, for EMP, while the lowest average CSD score is 0.323, for CUS. The second highest average score is awarded for COM, with 0.536. The third and fourth highest average scores are related to ENV and OTH information, with 0.517 and 0.415 respectively. PRO information has the fifth highest average score with 0.383. These findings are

consistent with those of Rizk et al. (2008); Haniffa and Cooke (2005); and Haron et al. (2004), who find that EMP information has the highest score compared with the other categories.

**Table 6-4: Average CSD Score**

<b>Category</b>		<b>COM</b>	<b>EMP</b>	<b>ENV</b>	<b>PRO</b>	<b>CUS</b>	<b>OTH</b>	<b>TOTAL</b>
<b>NO. Items</b>		<b>7</b>	<b>12</b>	<b>28</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>59</b>
2008	Mean	0.532	0.661	0.512	0.381	0.320	0.441	0.334
	Min	0.222	0.208	0.250	0.215	0.143	0.209	0.101
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2009	Mean	0.543	0.684	0.524	0.377	0.319	0.420	0.340
	Min	0.250	0.250	0.211	0.236	0.108	0.197	0.098
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2010	Mean	0.537	0.688	0.508	0.381	0.302	0.423	0.347
	Min	0.375	0.334	0.270	0.232	0.101	0.197	0.140
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
<b>2008-2010</b>	<b>Mean</b>	<b>0.536</b>	<b>0.677</b>	<b>0.517</b>	<b>0.383</b>	<b>0.323</b>	<b>0.415</b>	<b>0.340</b>
	Min	0.250	0.208	0.211	0.208	0.108	0.197	0.096
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000

## 6.5 CSD in Different Industries

In order to provide more information on CSD, this section discusses the level of CSD in different industries. Table 6.5 provides information on the level of CSD in terms of words according to different industries. As can be seen from Table 6.5, EMP information has the highest number of words and the Industrial Goods & Services sector provides a higher quantity of EMP information with 25 per cent. Oil & Gas, Personal & Household Goods, and Travel & Leisure industries provide the second highest level of CSD regarding EMP disclosure, with 12 per cent. The third sector is Retail with 10 per cent, while Health Care and Food & Beverages are the fourth and

fifth industries providing EMP information with, 9 per cent and 8 per cent respectively. Telecommunications is the sector providing the least information, with 2 per cent. In respect of COM information, Table 6.5 shows that Industrial Goods & Services provides the highest number of words with 29 per cent, while the lowest level is provided by the Telecommunications industry with 2 per cent. Similar results are found with regard to the other CSD themes.

Overall, Table 6.5 shows that the highest level of CSD in terms of number of words is provided by the Industrial Goods & Services sector with 26 per cent, followed by Travel & Leisure with 13 per cent. The third-ranked sectors in terms of producing CSD are the Oil & Gas, Personal & Household Goods, and Retail sectors with 11 per cent. In fourth and fifth place are Health Care and Food & Beverage, with 9 per cent and 8 per cent respectively. The industries providing the least information related to CSD are Technology, Media, and Telecommunications with 6 per cent, 3 per cent, and 2 per cent respectively.

Although the results are consistent with the argument that industrial firms are able to provide a higher quantity of CSD (Hassan 2010), the results in Table 6.6 reveal that the level of CSD may depend on the number of firms within the industry. For example, the Industrial Goods & Services industry has the highest number of companies (161 firms), while the Telecommunications sector has the lowest number of companies (12 firms).

**Table 6-5: Total Number of Words in Annual and Corporate Social Responsibility Reports by Industry**

Industry/Category	Companies		COM		EMP		ENV		PRO		CUS		OTH		TOTAL	
	No.	%	NO. Words	%	NO. Words	%	NO. Words	%	NO. Words	%	NO. Words	%	NO. Words	%	NO. Words	%
Oil & Gas	43	8%	27907	10%	40893	12%	18882	12%	5033	6%	4783	11%	17129	13%	114627	11%
Industrial Goods & Services	161	31%	81740	29%	81696	25%	41667	26%	21553	28%	9851	22%	27422	21%	263929	26%
Food & Beverage	33	6%	20867	8%	27355	8%	12415	8%	8540	11%	2940	7%	8411	7%	80528	8%
Personal & Household Goods	37	7%	29763	11%	40631	12%	15517	10%	8474	11%	5559	12%	13478	10%	113422	11%
Health Care	24	5%	24422	9%	30207	9%	11705	7%	5060	7%	4670	10%	12009	9%	88073	9%
Retail	75	15%	31310	11%	33593	10%	19520	12%	10726	14%	4771	11%	15246	12%	115166	11%
Media	26	5%	6487	2%	9551	3%	5905	4%	3179	4%	2483	6%	5074	4%	32679	3%
Travel & Leisure	60	12%	35883	13%	38772	12%	22388	14%	9876	13%	6047	13%	16717	13%	129683	13%
Telecommunications*	12	2%	6316	2%	7065	2%	2709	2%	1764	2%	1661	4%	3484	3%	22999	2%
Technology	44	9%	13298	5%	23223	7%	10221	6%	3464	4%	2360	5%	9510	7%	62076	6%
<b>TOTAL</b>	<b>515</b>	<b>100%</b>	<b>277993</b>	<b>100%</b>	<b>332986</b>	<b>100%</b>	<b>160932</b>	<b>100%</b>	<b>77669</b>	<b>100%</b>	<b>45125</b>	<b>100%</b>	<b>128477</b>	<b>100%</b>	<b>1023182</b>	<b>100%</b>

With regard to CSD scores in different industries, Table 6.6 shows that the highest average CSD score is awarded to EMP across industries. It also shows that Telecommunications has the highest score with 0.750, while the lowest score related to EMP information is 0.609 for the Oil & Gas industry. COM has the second highest score across industries compared with other themes, and the Telecommunications sector has the highest score with 0.637. The lowest score related to COM information is awarded to the Travel & Leisure sector with 0.507. As can be seen from Table 6.7, the third score is related to ENV and the highest score for this theme is awarded to the Travel & Leisure sector with 0.465. With regard to OTH, Table 6.6 shows that Health Care has the highest score of 0.497, while the lowest is 0.379 for Oil & Gas. While the Retail sector produces the highest score of 0.414 related to PRO information, Telecommunications has the lowest score at 0.325. Finally, the highest score for CUS disclosure is awarded to Industrial Goods & Services with 0.358; the lowest is given to Telecommunications with 0.188.



**Table 6-6: CSR Reports Scores by Industry**

Category NO. Items		COM 7	EMP 12	ENV 28	PRO 4	CUS 4	OTH 4	TOTAL 59
<b>Panel A: Annual reports</b>								
Oil & Gas	Mean	0.552	0.609	0.507	0.355	0.306	0.378	0.308
	Min	0.375	0.292	0.217	0.263	0.143	0.215	0.132
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Industrial Goods & Services	Mean	0.546	0.680	0.516	0.370	0.358	0.445	0.352
	Min	0.222	0.208	0.250	0.208	0.125	0.197	0.147
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Food & Beverage	Mean	0.609	0.702	0.523	0.398	0.356	0.413	0.391
	Min	0.417	0.417	0.217	0.179	0.236	0.286	0.262
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Personal & Household Goods	Mean	0.549	0.685	0.478	0.338	0.296	0.402	0.336
	Min	0.375	0.417	0.318	0.155	0.143	0.250	0.211
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Health Care	Mean	0.577	0.676	0.509	0.390	0.351	0.497	0.357
	Min	0.280	0.384	0.250	0.125	0.236	0.250	0.219
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Retail	Mean	0.582	0.744	0.526	0.414	0.230	0.419	0.359
	Min	0.322	0.459	0.211	0.236	0.143	0.232	0.223
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Media	Mean	0.538	0.706	0.486	0.396	0.288	0.428	0.336
	Min	0.318	0.583	0.375	0.209	0.125	0.250	0.206
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Travel & Leisure	Mean	0.507	0.640	0.465	0.392	0.298	0.414	0.308
	Min	0.298	0.292	0.375	0.197	0.108	0.208	0.160
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Telecommunications	Mean	0.637	0.750	0.492	0.325	0.188	0.454	0.354
	Min	0.375	0.375	0.270	0.197	0.101	0.340	0.280
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Technology	Mean	0.595	0.667	0.517	0.365	0.211	0.402	0.318
	Min	0.298	0.459	0.280	0.236	0.143	0.232	0.193
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000
<b>TOTAL</b>	Mean	0.536	0.677	0.517	0.390	0.323	0.408	0.340
	Min	0.250	0.208	0.211	0.250	0.108	0.155	0.096
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000

## 6.6 Summary

This chapter describes the extent of CSD in UK companies during the period 2008-2010. Six CSD themes are examined using both content analysis and disclosure index approaches. These themes are: COM, EMP, ENV, PRO, CUS, and OTH. The findings based on content analysis reveal that companies are more concerned about EMP, COM, ENV and OTH information but are less interested in providing information related to PRO and CUS disclosures.

The results of using disclosure index are in line with the results of using content analysis. In particular, they show that the highest score of CSD is related to EMP information, while the lowest is for CUS information. In line with previous studies, the disclosure index is used as a primary measurement for CSD to examine the association between EM and CSD. In addition, the findings of content analysis are used as an alternative measurement for CSD.

## **Chapter Seven**

### **Data Analysis and Discussion**

#### **7.1 Introduction**

This chapter aims to examine the association between EM and a set of explanatory variables of CSR, corporate governance, and other control variables. The remainder of this chapter is organised as follows. Section 7.2 presents the descriptive statistics and univariate analysis. Section 7.3 provides the correlation matrix analysis. Section 7.4 summarises the results of multivariate analysis. Section 7.5 presents the results of additional and sensitive analysis. Section 7.6 provides the summary of this chapter.

#### **7.2 Descriptive Statistics and Univariate Analyses**

##### **7.2.1 Descriptive Statistics**

Descriptive statistics for all variables are presented in Table 7.1. The dependent variable PM is the absolute discretionary accruals value measured through the yearly cross-sectional performance-matched (Kothari et al. 2005) model. The mean value of discretionary accruals is 0.044 and ranges from 0.000 to 0.300. This result implies that the average value of discretionary accruals in UK companies is 4.4 per cent of total assets, which is relatively comparable with the previous findings of Yu (2008); and Rajgopal et al. (1999), who document that the average value of discretionary accruals in US companies is around 4.6 and 4.9 per cent respectively. Othman and Zeghal (2006) report that Canadian companies have an average absolute value of discretionary accruals of 6 per cent, while their counterparts in France have an average of 3 per cent. The aforementioned results imply that the magnitude of EM in UK companies may be less than that of their

counterparts in US and Canadian companies, while it may higher than that of French companies.

The independent CSRI variable is the total score of CSD obtained by using the disclosure index. Following the previous studies (Lanis and Richardson 2012; Wibowo 2012), it is used as a proxy for CSR. As can be seen from Table 7.1, the mean value of CSRI is 0.367 and it ranges from 0.029 to 1.000. This finding implies that the average CSR score in UK companies is 37.3 per cent. This figure is relatively higher than those of Jiang et al. (2013); Mohamad et al. (2010); and Haniffa and Cooke (2005), who find that the average value of CSR scores in Chinese and Malaysian companies is 32, 18, and 11 per cent respectively. This comparison implies that firms in the UK have a higher level of CSR activities compared with Chinese and Malaysian firms. In other words, it indicates that UK companies are more interested in engaging in a higher level of social responsibility activities compared with Asian companies.

In respect to corporate governance effectiveness variables, a dummy variable of board of directors' effectiveness (BRDEF) as a control variable has a mean of 0.256, while the audit committee effectiveness (AUDEF) has an average of 0.609. These results indicate that 25.6 per cent of UK firms have efficient boards, whereas 60.9 per cent have efficient audit committees. Ho-Young (2008) indicates that the proportion of board effectiveness in US companies is 32.65 per cent, whereas the percentage of audit committee effectiveness is 34.54 per cent. These results suggest that the proportion of board effectiveness in UK companies is lower than that in US companies, while the proportion of audit committee effectiveness in UK companies is higher than that of their counterparts in the US. Since the audit committee effectiveness is measured as a dummy variable, which gives a value

of “1” if all the members of audit committee are independent and at least a sample median of them are financial experts and “0” otherwise, the aforementioned finding on audit committee effectiveness may imply that UK companies are complying with the guidelines of the UK Corporate Governance Code (2010) and Smith Report (2003), which recommend that all directors on audit committees be independent.

In terms of other control variables, the mean (median) of operating cash flow (OCF) is 0.135 (0.117), indicating that the average cash flow from operations in UK companies is around 13.5 per cent. Table 7.1 reports that the mean value of company size (SIZE) is 7.292 and the market-to-book ratio (MB) is 2.944. The result on company size is relatively comparable with the study by Kim et al. (2012), who find that the mean values of SIZE and MB are around 7.

**Table 7-1: Descriptive Statistics**

Variable	Mean	Min	P50	Max	Sd.	Kurtosis	Skewness
<i>PM</i>	0.044	0.000	0.034	0.300	0.042	10.751	2.332
<i>CSRI</i>	0.367	0.029	0.373	1.000	0.115	2.997	-0.253
<i>BRDEF</i>	0.256	0.000	0.000	1.000	0.437	2.246	1.116
<i>AUDEF</i>	0.609	0.000	1.000	1.000	0.488	1.201	-0.448
<i>OCF</i>	0.135	-0.135	0.117	0.850	0.104	11.109	1.916
<i>LEV</i>	0.599	-0.100	0.596	1.319	0.217	3.523	0.188
<i>ROA</i>	0.084	-0.544	0.073	1.341	0.117	43.192	4.069
<i>SIZE</i>	7.292	3.691	7.202	12.223	1.486	3.499	0.570
<i>LOSS</i>	0.136	0.000	0.000	1.000	0.343	5.514	2.125
<i>MB</i>	2.944	-0.387	2.269	22.070	3.050	18.755	3.430

*PM* = Discretionary accruals using Performance-adjusted model; *CSRI* = Corporate social responsibility score; *BRDEF* = Board of directors effectiveness coded as 1 if more than 50% of directors on the board who are not on audit committee are independent, and at least a sample median of directors on the board are financial experts; and 0 otherwise; *AUDEF* = Audit committee effectiveness coded as 1 if all the members are independent, and at least a sample median are financial experts; and 0 otherwise; *OCF* = Operating cash flow; *LEV* = Financial leverage as measured by total liabilities to total assets ratio; *ROA* = Firm performance as measured by net revenue to total assets ratio; *SIZE* = Firm size as measured by natural logarithm of total assets; *LOSS* = Coded 1 if firm has loss; and 0 otherwise; *MB* = Market-to-book ratio.

## 7.2.2 Univariate Analysis

This section tests whether the mean of several characteristics differs according to the level of discretionary accruals. The aim of this analysis is to consider whether companies are affected differently depending on the level of discretionary accruals. In doing so, the pooled study sample is divided into two subsets of data according to the discretionary accruals yearly cross-sectional median. The first data set comprises firms that have discretionary accruals above the median and is identified as “High EM”. Meanwhile, the

second data set comprises firms with discretionary accruals below the median and is identified as “Low EM”. The results of univariate tests using t-test and Mann-Whitney U test are presented in Table 7.2. Descriptive statistics show the mean and standard deviation of each variable, and t-test and Mann-Whitney U test are performed to provide the mean difference between High EM and Low EM firms.

PM shows a significant difference between the means of High EM and Low EM groups at the 1% level. Mean discretionary accruals are 7.2 per cent for High EM firms and 1.5 per cent for Low EM firms, suggesting that discretionary accruals in the High EM group are higher than those in the Low EM group by 5.7 per cent on average. The mean CSRI of the High EM subset is 35 per cent, which is lower than that of the Low EM group (38 per cent) and is significantly different from zero at the 1% level. This result suggests that firms with higher discretionary accruals may be more likely to provide less information related to CSR than those firms with lower levels of discretionary accruals. In other words, firms with a high level of CSR have a lower magnitude of discretionary accruals compared with firms with a lower level of CSR. These results are in line with the findings of the previous studies by Choi et al. (2013); and Kim et al. (2012), who find a negative relationship between the level of CSR and the magnitude of EM.

Table 7.2 shows that the average efficiency of BRDEF and AUDEF in High EM firms is insignificantly different from those in the Low EM group, suggesting that corporate governance effectiveness does not differ between High and Low EM firms. A possible explanation for these results is that the study sample consists of the FTSE 350 firms, which may have similar corporate governance requirements and recommendations. In spite of that, univariate tests do not reveal any significant differences between the means

regarding BRDEF and AUDEF for the two groups; they show that the percentages of BRDEF and AUDEF are higher in the Low EM group compared to those companies in the High EM group.

With regard to the other control variables, Table 7.2 reveals that OCF, LVEG, ROA, and MB ratio are insignificantly different from zero in the two groups. The difference between mean values of firm SIZE in High EM and Low EM groups is significant at the 5% level, with values of 7.127 and 7.456 respectively. This result is consistent with the notion that larger companies engage in lower levels of EM compared to smaller companies, which might manage earnings aggressively. In this regard, Chih et al. (2008) argue that larger companies are required to disclose their information more often; hence, they are less inclined to manage reported earnings compared with smaller companies. Empirically, this result is in line with the previous findings of Chih et al. (2008), who found that larger companies are less likely to engage in a higher level of EM. A comparison of losses (LOSS) reveals that firms making losses may engage in higher discretionary accruals. The mean values are 19.8 per cent for High EM firms and 7.4 per cent for those of low EM firms, which differs significantly from zero at the 1% level.

In light of the above, discretionary accruals in higher CSR firms appear to be lower than those in firms with lower levels of CSR. In other words, firms that provide lower CSR information are more likely to engage in a higher level of discretionary accruals than their counterparts with higher levels of CSR. Furthermore, larger firms appear to engage in lower levels of discretionary accruals compared with smaller firms, and larger firms may provide higher levels of CSR information. It appears that firms with losses tend to provide



lower levels of CSR and are therefore more likely to manage earnings than companies that have reported profits.

**Table 7-2: Univariate Test**

Variable	High EM		Low EM		T-test		Mann Whitney Tests	
	Mean	Sd.	Mean	Sd.	T-Value	P-Value	Z-Value	P-Value
<i>PM</i>	0.072	0.044	0.015	0.009	-20.411	***	-19.634	***
<i>CSRI</i>	0.350	0.118	0.384	0.109	3.389	***	3.66	***
<i>BRDEF</i>	0.226	0.419	0.287	0.453	1.590		1.587	
<i>AUDEF</i>	0.587	0.493	0.632	0.483	1.032		1.032	
<i>OCF</i>	0.587	0.493	0.632	0.483	1.032		1.032	
<i>LEVG</i>	0.598	0.241	0.599	0.192	0.057		0.126	
<i>ROA</i>	0.086	0.129	0.082	0.103	-0.411		0.727	
<i>SIZE</i>	7.127	1.455	7.456	1.501	2.520	**	2.754	***
<i>LOSS</i>	0.198	0.400	0.074	0.262	-4.194	***	-4.128	***
<i>MB</i>	3.021	3.137	2.867	2.965	-0.572		-0.231	

*PM* = Discretionary accruals using Performance-adjusted model; *CSRI* = Corporate social responsibility score; *BRDEF* = Board of directors effectiveness coded as 1 if more than 50% of directors on the board who are not on audit committee are independent, and at least a sample median of directors on the board are financial experts; and 0 otherwise; *AUDEF* = Audit committee effectiveness coded as 1 if all the members are independent, and at least a sample median are financial experts; and 0 otherwise; *OCF* = Operating cash flow; *LEVG* = Financial leverage as measured by total liabilities to total assets ratio; *ROA* = Firm performance as measured by net revenue to total assets ratio; *SIZE* = Firm size as measured by natural logarithm of total assets; *LOSS* = Coded 1 if firm has loss; and 0 otherwise; *MB* = Market-to-book ratio.

### 7.3 Correlation Matrix

Table 7.3 presents the correlation coefficients between dependent, independent and control variables in the full sample used in the regression analysis. Pearson correlation coefficients are reported in the first line, while the t-statistics are shown in the second

line. PM is negatively and significantly correlated with CSRI at the 1% level, suggesting that firms with higher levels of CSR report lower magnitudes of discretionary accruals, consistent with the previous studies by Choi et al. (2013); and Yongtae et al. (2012). Table 7.3 also reveals that discretionary accruals are negatively and significantly correlated with BRDEF at the 10% level, indicating that firms with higher board efficiency are more likely to report lower levels of discretionary accruals. In addition, discretionary accruals are negatively and significantly correlated with financial LEVG, suggesting that firms with higher LEVG reported lower discretionary accruals, consistent with the findings of Kim et al. (2003). Conversely, discretionary accruals are found to be positively and significantly correlated to LOSS at the 1% level. This result indicates that firms reporting losses are more likely to report higher levels of discretionary accruals, consistent with the study by Kent et al. (2010).

CSRI is positively and significantly correlated to SIZE at the 1% level, suggesting that larger companies provide more information on CSR, consistent with the results of Chih et al. (2008). Furthermore, CSRI is positively and significantly correlated to financial LEVG at the 5% level, suggesting that firms with higher LEVG reported more information on CSRI. This result is consistent with the findings of Gargouri et al. (2010).

Interestingly, BRDEF is negatively and significantly correlated to SIZE, suggesting that larger firms' boards of directors are less efficient. A possible explanation for this result is that larger companies may have larger boards, and larger boards are considered to be less effective than smaller boards because of, for example, coordination problems (Coles et al. 2008, p. 330).

AUDEF is found to be positively and significantly correlated with BRDEF at the 5% level, indicating that firms with higher BRDEF have higher AUDEF. The results also reveal that AUDEF is positively and significantly correlated to SIZE at the 1% level. This indicates that larger firms have more AUDEF, consistent with the results of Zaman et al. (2011). A significant and positive correlation is found between AUDEF and LOSS at the 5% level, suggesting that firms with higher levels of AUDEF are likely to be more conservative than those with lower levels of AUDEF, contrary to the results of Zaman et al. (2011). A possible explanation for this is that firms with higher AUDEF may be more likely to apply conservative accounting policies than their counterparts with lower AUDEF.

A positive and significant correlation is also found between OCF, ROA and MB at the 1% level, suggesting that firms with higher OCF have higher ROA and higher MB, consistent with Yongtae et al. (2012). Conversely, OCF is found to be negatively and significantly correlated to SIZE at the 1% level, implying that larger firms have lower OCF. It is also shown that OCF is negatively and significantly correlated to LOSS at the 1% level, suggesting that firms reporting losses have lower OCF, consistent with the findings of Yongtae et al. (2012).

LEVG is found to be positively and significantly correlated to SIZE and MB at the 1% level, suggesting that smaller firms may need more capital and outside loans. This finding also suggests that firms with higher MB may depend more on outside loans. These results are consistent with the study by Yongtae et al. (2012). However, a negative and significant correlation is found between LEVG and ROA at the 5% level, indicating that firms with higher LEVG have lower ROA, consistent with the findings of Yongtae et al. (2012).

A negative and significant correlation is found between ROA and both SIZE and LOSS at the 1% level, suggesting that larger companies have lower ROA; this finding also indicates that firms with losses have lower ROA compared with those companies whose net operations yield profits. In addition, ROA is positively and significantly correlated with MB at the 1% level, suggesting that firms with higher ROA also have higher MB, consistent with Yongtae et al. (2012).

SIZE is found to be negatively and significantly correlated to MB at the 10% level, implying that larger firms have lower MB. Table 7.3 also shows a negative and significant correlation between LOSS and MB ratio, suggesting that firms with losses have lower MB.

Based on the above, it can be concluded that the largest correlation coefficient is around 50 per cent, which is between ROA and OCF as shown in Table 7.3. This result indicates that multicollinearity between independent variables does not exist in the present study. In this regard, previous studies have suggested  $\pm 80$  per cent as the point at which multicollinearity problems may affect the regression analysis results (Abdul Rashidah and Ali 2006; Gujarati 2003). Furthermore, the Variance Inflation Factor (VIF) test is also performed in the study to examine the collinearity between the independent variables. As can be seen in Table 7.3, there is no variance higher than 10, which implies that the collinearity between the independent variables is not likely to be a problem in the regression models. In this regard, the previous studies by Abdul Rashidah and Ali (2006); and Gujarati (2003) argue that a variance inflation factor of less than 10 is not a cause for concern.

**Table 7-3: Pairwise correlation matrix**

<i>Variable</i>	<i>PM</i>	<i>CRSI</i>	<i>BRDQ</i>	<i>AUDQ</i>	<i>OCF</i>	<i>LEVG</i>	<i>ROA</i>	<i>SIZE</i>	<i>LOSS</i>	<i>MB</i>	<b>VIF</b>
<i>PM</i>	1.000										
<i>CRSI</i>	-0.200*** (0.000)	1.000									<b>1.030</b>
<i>BRDEF</i>	-0.104* (0.019)	0.042 (0.341)	1.000								<b>1.030</b>
<i>AUDEF</i>	-0.040 (0.365)	0.055 (0.215)	0.116** (0.008)	1.000							<b>1.040</b>
<i>OCF</i>	-0.066 (0.133)	-0.035 (0.432)	-0.018 (0.691)	-0.072 (0.101)	1.000						<b>1.400</b>
<i>LEVG</i>	-0.123** (0.005)	0.106** (0.017)	0.010 (0.814)	0.176*** (0.000)	-0.002 (0.961)	1.000					<b>1.130</b>
<i>ROA</i>	0.011 (0.808)	0.073 (0.098)	0.037 (0.406)	-0.067 (0.128)	0.495*** (0.000)	-0.082** (0.064)	1.000				<b>1.360</b>
<i>SIZE</i>	-0.080 (0.071)	0.244*** (0.000)	-0.139*** (0.002)	0.296*** (0.000)	-0.284*** (0.000)	0.215*** (0.000)	-0.224*** (0.000)	1.000			<b>1.190</b>
<i>LOSS</i>	0.199*** (0.000)	-0.052 (0.240)	0.053 (0.233)	0.114** (0.010)	-0.260*** (0.000)	0.085 (0.055)	-0.316*** (0.000)	0.0211 (0.632)	1.000		<b>1.030</b>
<i>MB</i>	-0.009 (0.845)	0.060 (0.160)	-0.030 (0.530)	-0.070 (0.120)	0.170*** (0.000)	0.210*** (0.000)	0.150*** (0.000)	-0.110* (0.010)	-0.100* (0.020)	1.000	<b>1.120</b>
<b>Mean VIF</b>											<b>1.150</b>

\*\*\* \*\*and \* Denote significance (2-tailed) at 0.001, 0.05, and 0.10 levels respectively.

*PM* = Discretionary accruals using Performance-adjusted model; *CRSI* = Corporate social responsibility score; *BRDEF* = Board of directors effectiveness coded as 1 if more than 50% of directors on the board who are not on audit committee are independent, and at least a sample median of directors on the board are financial experts; and 0 otherwise; *AUDEF* = Audit committee effectiveness coded as 1 if all the members are independent, and at least a sample median are financial experts; and 0 otherwise; *OCF* = Operating cash flow; *LEVG* = Financial leverage as measured by total liabilities to total assets ratio; *ROA* = Firm performance as measured by net revenue to total assets ratio; *SIZE* = Firms size as measured by natural logarithm of total assets; *LOSS* = Coded 1 if firm has loss; and 0 otherwise; *MB* = Market-to-book ratio.

## 7.4 Multivariate Analysis

In this section, multiple regression analysis of discretionary accruals by a set of predictor variables is performed to explain and predict EM for the whole study.

The results of pooled OLS regression analysis are presented in Table 7.4. The dependent variable is discretionary accruals (PM) and the main independent variable is CSR score (CSRI). Other independent variables such as board effectiveness (BRDEF) and audit committee effectiveness (AUDEF) are included in the regression. Furthermore and consistent with the previous studies, control variables for firms' characteristics, such as OCF, LEVG, ROA, SIZE, LOSS, and MB are included in the regression. The overall  $R^2$  as shown in Table 7.4 is around 12 per cent, showing that the predictor variables are able to explain and predict the dependent variable by approximately 12 per cent. The power of the regression model is relatively comparable with previous studies (Jiang et al. 2013; Pyo and Lee 2013; Lassaad and Khamoussi 2012; Yongtae et al. 2012).

Table 7.4 shows that the coefficient of CSRI is negatively and significantly related to EM (*coef.* = -0.062, *t* = -3.513, *p* < 0.01). This result indicates that firms with a higher level of CSR report lower levels of discretionary accruals compared with those firms with a lower level of CSR. This finding is in line with the first hypothesis H1.

The aforementioned result is inconsistent with the previous results of Gargouri et al. (2010); and Prior et al. (2008), who document a positive and significant relationship between EM and CSR and argue that CSR is used as an effective tool to deal with stakeholder activism and vigilance when firms engage in EM. It is also inconsistent with the study by Sun et al. (2010), who find no relation between EM and

environmental disclosure in the UK. However, the result is in line with the studies of Choi et al. (2013); Jiang et al. (2013); Kim et al. (2012); Lassaad and Khamoussi (2012); Yongtae et al. (2012); and Chih et al. (2008), who find that firms with greater levels of CSR have lower levels of EM. The negative association between EM and CSR is predicted by Chih et al. (2008), who argue that financial transparency and accountability are vital to CSR; thus, they expect the principles of CSR to prevent managers from using their opportunistic discretion over reported earnings, which will in turn improve the quality of financial reports. They named their negative relationship hypothesis as "*myopia avoidance hypothesis*" (Chih et al. 2008, pp.181-182).

The coefficient of BRDEF is negatively and significantly related to the magnitude of EM (*coef.* = -0.010, *t* = -2.606, *p* < 0.01). This result implies that firms with high BRDEF report lower discretionary accruals. As BRDEF in the present study is measured by combining the number of independent and financially expert directors on the board, as suggested by Ho-Young (2008), the result is consistent with Dimitropoulos and Asteriou (2010); Lo et al. (2010); Davidson et al. (2005); (Xie et al. 2003); and Klein (2002), who find that a board with a higher proportion of independent directors is negatively associated with the magnitude of discretionary accruals. Moreover, the result is in line with the assumption that the financial expertise of the board of directors is an important factor for enhancing the quality of financial reports.

However, several studies in the Asian context, such as those in Hong Kong (Jaggi et al. 2009), Indonesia (Siregar and Utama 2008), Malaysia (Abdul Rashidah and Ali 2006), and China (Tian and Chung-Ming 2001), find that the proportion of

independent board members has no effect on the magnitude of EM, and they conclude that there is no association between the independence of directors on the board and EM. A possible interpretation of the aforementioned results in the Asian context is that the system of having independent directors in such countries is still in development and/or that family-controlled companies still predominate, with family members dominating the boards of directors in these countries.

Nevertheless, the UK study by Peasnell et al. (2005) found that the proportion of independent directors on the board is negatively and significantly related to income-increasing EM to avoid reported losses and earnings reductions.

The coefficient of AUDEF is insignificantly related to discretionary accruals (*coef.* = -0.004, *t* = -0.788, *p* > 0.10). Although there is no relationship between discretionary accruals and the AUDEF, the direction of the coefficient is consistent with the findings of Kent et al. (2010); Abdul Rashidah and Ali (2006); and Peasnell et al. (2005), indicating that discretionary accruals decrease when the AUDEF is high. As the AUDEF is measured as the proportion of independent directors on the audit committee and the median of financial experts among the directors, following Ho-Young (2008), the result of AUDEF is consistent with the previous studies that found a negative and insignificant relationship between EM and the proportion of independent directors on the audit committee. It is also in line with Kent et al. (2010); Abdul Rashidah and Ali (2006); and Yang and Krishnan (2005), who found a negative and insignificant relationship between EM and the presence of financially expert directors on the audit committee.



With regard to other control variables, the coefficient of OCF is negatively and significantly related to discretionary accruals (*coef.* =  $-0.047$ ,  $t = -2.122$ ,  $p < 0.05$ ), suggesting that firms with higher OCF report a lower magnitude of EM compared with those firms with lower OCF. This finding corroborates the findings of Jiang et al. (2008); Lobo and Zhou (2006); Becker et al. (1998); and Dechow et al. (1995), who found that discretionary accruals are negatively and significantly related to EM.

The coefficient of LEVG is significantly and negatively associated with EM (*coef.* =  $-0.018$ ,  $t = -2.081$ ,  $p < 0.05$ ), suggesting that firms with higher LEVG report lower EM compared to those firms with lower LEVG. This result is in line with the studies by Choi et al. (2013); Chih et al. (2008); and DeAngelo et al. (1994), who find that LEVG is negatively and significantly related to discretionary accruals.

The SIZE is negatively and significantly related to EM at (*coef.* =  $-0.003$ ,  $t = -2.121$ ,  $p < 0.05$ ), consistent with previous studies (Kim et al. 2012; Hong and Andersen 2011; Yip et al. 2011; Chih et al. 2008; Xie et al. 2003; Becker et al. 1998). This finding reveals that larger companies tend to report lower magnitudes of EM than smaller companies do. In this regard, Xie et al. (2003), for example, argue that smaller companies are more likely to show higher discretionary accruals because they may be operating in a business environment that is subject to less scrutiny, thus providing them with greater opportunities to engage in higher levels of EM compared with larger firms.

The coefficient of LOSS is found to be significantly and positively related to discretionary accruals (*coef.* =  $0.045$ ,  $t = 4.686$ ,  $p < 0.01$ ), consistent with (Kent et al. 2010). This result implies that firms with losses report higher discretionary accruals,

indicating that firms that reported a loss in the period tend to engage in higher EM than those firms that have reported a profit. This type of EM is known as the 'big bath' technique. This technique may be preferred when managers realise that the current earnings are so low that they will be unable to meet earnings targets; thus, managers have an incentive to further reduce current earnings to meet future earnings targets (Healy 1985). According to Healy (1985), firms tend to use the "big bath" strategy when they realise that they will be unable to manage earnings to meet managerial targets.

None of the coefficients of ROA and MB ratios are significantly related to EM, suggesting that these two ratios do not affect the magnitude of EM. Although these results are in line with the previous studies by Sun et al. (2010); and Chih et al. (2008), who find that neither ROA nor MB ratios are significantly related to EM, they reflect the conflicting views in the previous literature regarding the potential impact of ROA and MB on EM. While several studies have found ROA and MB are negatively significant related to EM (e.g. Skinner 2003). others have found ROA and MB are positively related to EM (e.g. Thiruvadi and Huang 2011; Peni and Vähämaa 2010; Jo and Kim 2007); still others have found ROA and MB to be unrelated to EM (e.g. Chih et al. 2008).

**Table 7-4: Results of pooled OLS regression of CSR on EM**

<i>PM</i>	<i>Exp. Sign</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>
<i>CSRI</i>	-	-0.062	-3.513	***
<i>BRDEF</i>	-	-0.010	-2.606	***
<i>AUDEF</i>	-	-0.004	-0.788	
<i>OCF</i>	?	-0.047	-2.122	**
<i>LEV</i>	?	-0.018	-2.081	**
<i>ROA</i>	?	0.012	0.457	
<i>SIZE</i>	?	-0.003	-2.121	**
<i>LOSS</i>	+	0.025	4.323	***
<i>MB</i>	?	0.000	1.200	
<i>Constant</i>	?	0.103	6.882	***
<i>Adj. R<sup>2</sup></i>		0.120		

*PM* = Discretionary accruals using Performance-adjusted model; *CSRI*= Corporate social responsibility score; *BRDEF* = Board of directors effectiveness coded as 1 if more than 50% of directors on the board who are not on audit committee are independent, and at least a sample median of directors on the board are financial experts; and 0 otherwise; *AUDEF* = Audit committee effectiveness coded as 1 if all the members are independent, and at least a sample median are financial experts; and 0 otherwise; *OCF* = Operating cash flow; *LEV* = Financial leverage as measured by total liabilities to total assets ratio; *ROA* = Firm performance as measured by net revenue to total assets ratio; *SIZE* = Firm size as measured by natural logarithm of total assets; *LOSS* = Coded 1 if firm has loss; and 0 otherwise; *MB* = Market-to-book ratio.

Since the coefficient of the total CSRI score as a proxy for CSR performance reveals a significant and negative relationship with EM, further investigations of the association between sub-scores of CSR and EM are required. Therefore, following the previous studies by Yongtae et al. (2012); and Gargouri et al. (2010), the present study examines whether there is association between EM and CSR sub-scores by testing the association between each CSR sub-score and EM. Multiple pooled OLS regression is performed to examine each of the six CSR sub-themes: community (COM), employees (EMP), environment (ENV), products (PRO), customers (CUS), and others (OTH). The results of the six regression models are presented in Table 7.5. As

can be seen from Table 7.5, overall  $R^2$  for the six models are relatively lower than those of the main analysis presented in Table 7.4. The constants are positively significant at ( $p < 0.01$ ).

The results of model 1 in Table 7.5 reveal that the coefficient of COM is significantly and negatively related with the extent of discretionary accruals (*coef.* = -0.019,  $t = -2.242$ ,  $p < 0.05$ ), consistent with hypothesis H2.

The result of the association between EM and COM suggests that firms with higher levels of COM information report lower discretionary accruals compared to those firms with lower levels of such information. This result is in line with the finding of Kim et al. (2012), who find a negative and significant association between COM and EM.

In respect to EMP information, Model 2 shows that the coefficient of EMP is negatively and significantly related to the magnitude of EM (*coef.* = -0.028,  $t = -2.55$ ,  $p < 0.05$ ), indicating that firms with higher levels of EMP tend to report lower discretionary accruals. This result is in line with hypothesis H3.

The above finding is consistent with Kim et al. (2012), who find a negative and significant relationship between EMP and EM, but it is inconsistent with the results provided by Gargouri et al. (2010), who find a positive and significant association between EM and EMP. Gargouri et al. (2010) justify their findings by suggesting that Canadian companies are relatively smaller compared to other firms such as US companies; therefore, by engaging in CSR activities these firms will incur high costs which in turn may reduce their financial performance, at least in the short term.

Therefore, this incentive may encourage managers to engage less in CSR activities and resort to a higher level of EM. In this regard, Prior et al. (2008) argue that when managers engage in EM they resort to CSR as an effective tool to deal with stakeholder activism and vigilance. However, an opposite view posited by several researchers argues that providing a higher level of earnings reporting quality is closely connected to CSR activities; therefore, a negative relationship between EM and CSR is expected to be confirmed (e.g. Choi et al. 2013; Kim et al. 2012; Chih et al. 2008). Choi et al. (2013), for instance, identify this type of negative relationship between EM and CSR as the “long-term perspective hypothesis”. They find that CSR is negatively and significantly related to EM practices.

Model 3 and model 4 reveal that ENV and PRO sub-scores are negatively and significantly related to the extent of discretionary accruals (*coef.* = -0.024, *z* = -3.119, *p* < 0.01), and (*coef.* = -0.029, *t* = -2.069, *p* < 0.05) respectively, supporting the following hypotheses H4 and H5.

These findings suggest that firms with higher levels of ENV and PRO information report a lower magnitude of discretionary accruals. Although, the result regarding the association between EM and ENV is inconsistent with the study by Sun et al. (2010) who find no relationship between the two variables, it is consistent with those of Kim et al. (2012), who find that both ENV and PRO are negatively related to EM.

The coefficients of CUS and OTH in models 5 and 6 are insignificantly related to EM, rejecting the two following hypotheses H6 and H7.

Although there are no relationships between the levels of CUS and OTH and the magnitude of EM, the direction of the coefficients are in line with the main findings in Table 7.4, revealing that discretionary accruals decreased when the levels of CUS and OTH information increased.

In brief, with regarding to corporate governance and other control variables, the coefficients of BRDEF, AUDEF, OCF, LEVG, ROA, SIZE, LOSS and MB show relatively similar results to the results and directions of the main findings in Table 7.4.

According to the results in Tables 7.4 and 7.5, it can be concluded that the level of CSR information appears to play an essential role in constraining EM practices. In addition, the BRDEF seems to be an important tool for providing high-quality earnings reporting.

Table 7-5: Results of OLS regression of CSR individual themes on EM

PM	Exp. Sing	<u>Model (1)</u>			<u>Model (2)</u>			<u>Model (3)</u>			<u>Model (4)</u>			<u>Model (5)</u>			<u>Model (6)</u>		
		Coef.	t	P>t	Coef.	t	P>z	Coef.	t	P>t	Coef.	t	P>t	Coef.	t	P>t	Coef.	t	P>t
COM	-	-0.019	-2.242	**															
EMP	-				-0.028	-2.355	**												
ENV	-							-0.024	-3.119	***									
PRO	-										-0.029	-2.069	**						
CUS	-													-0.005	-0.446				
OTH	-																-0.002	-0.125	
BRDEF	-	-0.01	-2.639	***	-0.011	-2.723	***	-0.009	-2.488	**	-0.011	-2.818	***	-0.011	-2.717	***	-0.01	-2.681	***
AUDEF	-	-0.004	-0.89		-0.004	-0.855		-0.004	-0.871		-0.004	-0.88		-0.004	-0.866		-0.004	-0.888	
OCF	?	-0.048	-2.121	**	-0.051	-2.242	**	-0.044	-1.945	*	-0.047	-2.052	**	-0.048	-2.133	**	-0.048	-2.099	**
LEV	?	-0.019	-1.997	**	-0.018	-1.984	**	-0.018	-2.023	**	-0.018	-1.98	**	-0.019	-2.019	**	-0.019	-2.066	**
ROA	?	0.013	0.492		0.014	0.534		0.011	0.419		0.01	0.386		0.012	0.459		0.012	0.463	
SIZE	?	-0.003	-2.135	**	-0.003	-2.209	**	-0.003	-2.132	**	-0.003	-2.104	**	-0.003	-2.138	**	-0.003	-2.12	**
LOSS	+	0.025	4.126	***	0.026	4.375	***	0.027	4.322	***	0.026	4.298	***	0.026	4.341	***	0.026	4.338	***
MB	?	0.000	0.898		0.000	0.805		0.000	0.697		0.000	0.587		0.000	0.6		0.000	0.615	
Constant	?	0.091	6.537	***	0.102	5.935	***	0.09	6.697	***	0.089	6.324	***	0.085	6.135	***	0.084	6.454	***
Adj. R <sup>2</sup>		0.095			0.100			0.104			0.096			0.086			0.086		

## 7.5 Additional and sensitivity analyses

### 7.5.1 Additional analyses

In order to better explain and predict the behaviour of discretionary accruals, further analyses classified by discretionary accruals' direction<sup>5</sup> (i.e. positive and negative accruals) and by industrial classification are performed.

#### 7.5.1.1 Discretionary accruals direction analysis

Following the studies by Kim et al. (2012); Gul et al. (2006); and Ashbaugh et al. (2003), the present study breaks the full sample down into two groups: firms with income-increasing (positive) discretionary accruals and firms with income-decreasing (negative) discretionary accruals. The objective of this partition is to investigate whether or not the direction of discretionary accruals has a different impact on the association between EM and CSR and other independent variables. It will also provide a better understanding of discretionary accruals behaviour. The results on firms with income-decreasing (negative) and income-increasing (positive) discretionary accruals are presented in Tables 7.6 and 7.7 respectively.

The results of multiple pooled OLS regression for observations with income-decreasing discretionary accruals are presented in Table 7.6. The overall  $R^2$  is 23 per cent for firms with income-decreasing discretionary accruals, indicating that the explanatory power of the regression model is relatively higher than the model of full observations in Table 6.5. The coefficient of the contrast is negative and significant at 10%, suggesting that firms with income-decreasing accruals reported discretionary

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<sup>5</sup> Discretionary accruals direction is divided into Income-increasing (positive) and income-decreasing (negative) directions.



accruals by 4 per cent of total assets at the beginning of the year regardless of other independent variables.

The coefficient of CSRI is negatively significant (*coef.* = -0.059, *t* = -2.293, *p* < 0.05), suggesting that firms with higher levels of CSR report lower level of income-decreasing discretionary accruals than those firms with lower levels of CSR. This finding is in line with the main finding presented in Table 7.4 and supports the results documented by Kim et al. (2012), who find that companies with higher level of CSR are more likely to engage in income-decreasing EM. Since transparency and accountability are vital to CSR, it is expected that a firm with strong commitments to CSR principles will not tend to hide unfavourable earnings realisation and, therefore, will not practise EM in order to either increase or decrease reported earnings. Therefore, the opposite association between EM and CSR is in line with the argument that EM occurs less often in a firm with strong commitments to CSR, since opportunistic EM practice is perceived as unethical behaviour (Shleifer 2004). In addition, Chih et al. (2008) argue that a strong commitment to CSR principles prevents managers from using their opportunistic discretion over earnings.

The coefficient of the BRDEF is also negatively significant (*coef.* = -0.011, *t* = -2.137, *p* < 0.05), indicating that firms with higher board effectiveness report lower negative discretionary accruals. However, as presented in the main results in Table 7.4, the AUDEF is found to be negatively and insignificantly associated with income-decreasing discretionary accruals, which implies that AUDEF does not impact the negative direction of discretionary accruals. Although the UK Corporate Governance Code (2010) is widely regarded as an international benchmark for good corporate

governance practice, it provides firms with the flexibility to choose between complying with its principles or explaining why they are not doing so (Arcot et al. 2010). In this regard, Arcot et al. (2010) find that less than 10 per cent of UK companies were not compliant with the corporate governance code and argue that the flexibility in corporate governance regulations and recommendations play a crucial role in the monitoring function of corporate governance. Therefore, the findings in the present study regarding AUDEF may reflect the fact that not all firms comply with the recommendations of the code of corporate governance

The coefficient of OCF is negatively and significantly related to income-decreasing discretionary accruals at the 1%. The results suggest that firms with higher OCF are more likely to report a lower level of income-decreasing discretionary accruals. These results support the previous studies results (Kim et al. 2012; Kim et al. 2003; Becker et al. 1998). However, the coefficient of LOSS shows a positive and significant relationship with income-decreasing discretionary accruals. This finding indicates that firms reporting losses are more likely to report lower levels of income-decreasing discretionary accruals. The result is consistent with the “big bath” strategy, which argues that managers prefer to engage in income-decreasing discretionary accruals when they realise that current earnings are so low that they will be unable to meet earnings targets. Therefore, as a strategy they further reduce current earnings through income-decreasing discretionary accruals in order to be able to meet future earnings targets (Healy 1985).

The coefficients of LEVG, ROA, Size and MB are insignificantly associated with income-decreasing discretionary accruals, suggesting that LEVG, ROA, Size and MB do not affect the direction of income-decreasing discretionary accruals.

On the other hand, Table 7.7 presents the results of multiple pooled OLS regression for firms with income-increasing discretionary accruals. As can be seen from Table 7.7, the overall  $R^2$  is around 11%, suggesting that the explanatory power of the model is relatively lower than the explanatory power of the full sample in Table 7.4 and income-decreasing discretionary accruals in Table 7.6. The intercept is positive and significant at the 1% level, indicating that firms with income-increasing accruals reported discretionary accruals of around 9 per cent of total assets at the beginning of the year regardless of other independent variables.

The coefficient of CSRI is significantly negative (*coef.* = -0.047, *t* = -1.998, *p* < 0.05), suggesting that firms with higher levels of CSR report lower levels of income-increasing discretionary accruals. This finding corroborates that of Kim et al. (2012), who find that CSR is negatively associated with income-increasing EM.

A negative and significant relationship is also found between income-increasing discretionary accruals and BRDEF (*coef.* = -0.010, *t* = -1.900, *p* < 0.10), suggesting that firms with higher BRDEF report lower income-increasing accruals. However, the coefficient of AUDEF is negative and insignificantly related to income-increasing EM. These results are in line with the main results in Table 7.4 and suggest that AUDEF does not affect income-increasing discretionary accruals.

With respect to the control variables, the coefficients of OCF and SIZE are negative and significantly related to income-increasing discretionary accruals, implying that firms with higher OCF and/or larger companies report lower income-increasing discretionary accruals.

Interestingly, the coefficient of LOSS reveals no significant relationship with income-increasing discretionary accruals, suggesting that firms that reported losses during the period do not engage in income-increasing EM. In contrast, they are more likely to engage in income-decreasing discretionary accruals. These results are in line with the "big bath" strategy that supposes that managers prefer to manage current earnings downwards when they realise that the current earnings will be unable to meet earnings targets. Therefore, they defer current earnings to be used to meet earnings targets in the future.

None of the coefficients for LEVG, ROA and MB are significantly related to income-increasing discretionary accruals, suggesting that LEVG, ROA and MB do not have an impact on income-increasing EM.

In light of the above, the results in Table 7.6 and 7.7 reveal that CSRI, BODEF, OCF and SIZE run in opposite directions with about income-decreasing and income-increasing EM, suggesting that firms with higher CSRI, BODEF and OCF and larger companies report lower income-decreasing and lower income-increasing discretionary accruals. In addition, the results show that firms with losses tend to engage in income-decreasing rather than income-increasing EM.

**Table 7-6: Multiple OLS regression for firms with negative earnings management (income-decreasing)**

<i>PM (-)</i>	<i>Exp. Sing</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>
<i>CSRI</i>	-	-0.059	-2.293	**
<i>BRDEF</i>	-	-0.011	-2.137	**
<i>AUDEF</i>	-	-0.001	-0.133	
<i>OCF</i>	?	0.241	3.637	***
<i>LEVG</i>	?	-0.001	-0.049	
<i>ROA</i>	?	-0.029	-0.954	
<i>SIZE</i>	?	0.001	-0.216	
<i>LOSS</i>	+	0.041	5.313	***
<i>MB</i>	?	0.001	-1.168	
<i>Constant</i>	?	0.038	1.725	*
<i>Adj. R<sup>2</sup></i>		0.232		
<p><b>PM</b> = Discretionary accruals using Performance-adjusted model; <b>CSRI</b>= Corporate social responsibility score; <b>BRDEF</b> = Board of directors effectiveness coded as 1 if more than 50% of directors on the board who are not on audit committee are independent, and at least a sample median of directors on the board are financial experts; and 0 otherwise; <b>AUDEF</b> = Audit committee effectiveness coded as 1 if all the members are independent, and at least a sample median are financial experts; and 0 otherwise; <b>OCF</b> = Operating cash flow; <b>LEVG</b> = Financial leverage as measured by total liabilities to total assets ratio; <b>ROA</b> = Firm performance as measured by net revenue to total assets ratio; <b>SIZE</b> = Firm size as measured by natural logarithm of total assets; <b>LOSS</b> = Coded 1 if firm has a loss; and 0 otherwise; <b>MB</b> = Market-to-book ratio.</p>				

**Table 7-7: Multiple OLS regression for firms with positive earnings management (income-increasing)**

<i>PM(+)</i>	<i>Exp. Sing</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>
<i>CSRI</i>	+	-0.047	-1.998	**
<i>BRDEF</i>	+	-0.010	-1.900	*
<i>AUDEF</i>	+	-0.004	-0.673	
<i>OCF</i>	?	-0.092	-2.486	**
<i>LEVG</i>	?	-0.013	-0.951	
<i>ROA</i>	?	0.032	1.416	
<i>SIZE</i>	?	-0.004	-2.180	**
<i>LOSS</i>	-	0.001	0.116	
<i>MB</i>	?	0.002	2.722	
<i>Constant</i>	?	0.091	5.291	***
<i>Adj. R<sup>2</sup></i>		0.114		

*PM* = Discretionary accruals using Performance-adjusted model; *CSRI*= Corporate social responsibility score; *BRDEF* = Board of directors effectiveness coded as 1 if more than 50% of directors on the board who are not on audit committee are independent, and at least a sample median of directors on the board are financial experts; and 0 otherwise; *AUDEF* = Audit committee effectiveness coded as 1 if all the members are independent, and at least a sample median are financial experts; and 0 otherwise; *OCF* = Operating cash flow; *LEVG* = Financial leverage as measured by total liabilities to total assets ratio; *ROA* = Firm performance as measured by net revenue to total assets ratio; *SIZE* = Firm size as measured by natural logarithm of total assets; *LOSS* = Coded 1 if firm has a loss; and 0 otherwise; *MB* = Market-to-book ratio.

### 7.5.1.2 Industry Analysis

The type of industry in which a company operates can play an important role in motivating managers to manage reported earnings (Sun et al. 2010; Toniato et al. 2006). Thus, the relation between discretionary accruals and CSR can be driven by the type of industry. In order to take this potential impact into account, the study re-performed OLS regression analysis for each industry, following the previous studies of Gargouri et al. (2010); Sun et al. (2010); and Prior et al. (2008). Industry

Classification Benchmark (ICB) is used to classify the full sample into ten industries. The object of these analyses is to investigate whether or not the type of industry affects the relationship between discretionary accruals and CSR. Therefore, the aim of this analysis is to examine whether or not the results of the primary analysis in Table 7.4 are affected by the type of industry. To do so, an industry dummy variable for each industry is included in the regression, taking a value of 1 if the firm belongs to a particular industry and 0 otherwise.

The results of the industry analysis are presented in Table 7.8. Consistent with the primary findings in Table 7.4, the coefficients of CSRI for all industrial models are negatively significant at the 1% level, suggesting that firms with higher levels of CSR across industries report lower levels of discretionary accruals.

The coefficients of BRDEF reveal a negative and significant relationship with discretionary accruals at the 1% level for the ten models, indicating that firms with higher BRDEF report lower discretionary accruals. These results confirm and consistent with the main results in Table 7.4.

The coefficients of AUDEF for the ten models show an insignificant relationship between the AUDEF and discretionary accruals, implying that AUDEF does not impact the magnitude of EM.

In terms of control variables, the coefficients of OCF, LEVG, and SIZE are negatively and significantly related to EM across sectors at the 5% level, consistent with the primary results in Table 7.4. The coefficient of LOSS is positively and significantly related to discretionary accruals for all the industrial models, consistent with the

main result in Table 7.4. The coefficients of MB and ROA are insignificantly related to EM, thus corroborating the primary results.

Although most industries are insignificantly related to discretionary accruals, the results in Table 7.8 reveal that Oil & Gas, Food & Beverages, and Telecommunications are significantly related to discretionary accruals. While the coefficient of the Oil & Gas industry shows a positive and significant association with discretionary accruals at the 5% level, the coefficients of Food & Beverages and Telecommunications are negatively and significantly related to discretionary accruals at the 5% and 1% levels respectively. These results suggest that the Oil & Gas sector tends to report higher rather than lower levels of discretionary accruals, while Food & Beverages and Telecommunications are more likely to report lower levels of discretionary accruals. A possible explanation for these differing results is that these industries may have more complex transactions, such as revenue recognition, than the other industries, which indicates that they may have more incentives than others to manage earnings. In this regard, Beasley et al. (2000, p.421) argue that revenue frauds are common in technology firms, whereas assets frauds and misappropriations are most common in financial services firms. They find that certain industries have more particular types of fraud than other industries. Thereby, the results on the industrial variables are in line with those of Beasley et al. (2000), who find that the nature of frauds differs by type of industry.



Table 7-8: Multiple OLS regression for type of industry

<i>PM</i>	<u>Model (1)</u>			<u>Model (2)</u>			<u>Model (3)</u>			<u>Model (4)</u>			<u>Model (5)</u>		
	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>
<i>CSRI</i>	-0.058	-3.352	***	-0.063	-3.559	***	-0.059	-3.343	***	-0.065	-3.585	***	-0.062	-3.515	***
<i>BRDEF</i>	-0.009	-2.242	**	-0.009	-2.457	**	-0.010	-2.648	***	-0.008	-2.261	**	-0.010	-2.659	***
<i>AUDEF</i>	-0.005	-1.036		-0.003	-0.738		-0.004	-0.824		-0.004	-0.971		-0.004	-0.818	
<i>OCF</i>	-0.049	-2.253	**	-0.048	-2.147	**	-0.048	-2.130	**	-0.047	-2.177	**	-0.047	-2.131	**
<i>LEV</i>	-0.015	-1.778	*	-0.017	-1.957	*	-0.018	-2.080	**	-0.015	-1.712	*	-0.018	-2.091	**
<i>ROA</i>	0.007	0.269		0.011	0.435		0.011	0.452		0.012	0.508		0.012	0.459	
<i>SIZE</i>	-0.003	-2.450	**	-0.003	-2.180	**	-0.003	-2.098	**	-0.003	-2.279	**	-0.003	-2.105	**
<i>LOSS</i>	0.024	4.235	***	0.025	4.275	***	0.025	4.288	***	0.024	4.094	***	0.025	4.310	***
<i>MB</i>	0.000	1.657		0.000	1.223		0.000	1.231		0.000	1.275		0.000	1.189	
<i>Oil &amp; Gas</i>	0.022	2.149	**												
<i>Industrial Goods &amp; Services</i>				-0.004	-1.069										
<i>Food &amp; Beverage</i>							-0.009	-2.439	**						
<i>Personal &amp; Household Goods</i>										0.017	1.344				
<i>Health Care</i>													-0.002	-0.372	
<i>Constant</i>	0.102	7.235	***	0.105	6.833	***	0.103	6.855	***	0.103	6.853	***	0.104	6.892	***
<i>Adj. R<sup>2</sup></i>	0.134			0.120			0.120			0.127			0.118		

Table 7.8 (Continue)

<i>PM</i>	<u>Model (6)</u>			<u>Model (7)</u>			<u>Model (8)</u>			<u>Model (9)</u>			<u>Model (10)</u>		
	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>
<i>CSRI</i>	-0.061	-3.292	***	-0.062	-3.512	***	-0.061	-3.505	***	-0.061	-3.464	***	-0.061	-3.437	***
<i>BRDEF</i>	-0.010	-2.558	**	-0.010	-2.643	***	-0.010	-2.604	***	-0.010	-2.553	**	-0.010	-2.746	***
<i>AUDEF</i>	-0.004	-0.776		-0.004	-0.781		-0.004	-0.808		-0.003	-0.683		-0.003	-0.739	
<i>OCF</i>	-0.047	-2.107	**	-0.047	-2.108	**	-0.047	-2.135	**	-0.046	-2.081	**	-0.048	-2.145	**
<i>LEVG</i>	-0.019	-2.183	**	-0.018	-2.022	**	-0.018	-1.971	**	-0.018	-2.092	**	-0.017	-1.907	*
<i>ROA</i>	0.011	0.448		0.010	0.403		0.012	0.465		0.012	0.458		0.012	0.463	
<i>SIZE</i>	-0.003	-2.098	**	-0.003	-2.111	**	-0.003	-2.105	**	-0.003	-2.139	**	-0.003	-2.052	**
<i>LOSS</i>	0.025	4.339	***	0.025	4.353	***	0.025	4.320	***	0.025	4.373	***	0.025	4.340	***
<i>MB</i>	0.000	1.242		0.000	1.263		0.000	1.218		0.000	1.157		0.000	1.152	
<i>Retail</i>	0.003	0.456													
<i>Media</i>				-0.009	-1.632										
<i>Travel &amp; Leisure</i>							-0.003	-0.649							
<i>Telecommunications</i>										-0.016	-2.665	***			
<i>Technology</i>													0.003	0.376	
<i>Constant</i>	0.102	6.688	***	0.103	6.904	***	0.103	6.873	***	0.103	6.859	***	0.102	6.415	***
<i>Adj. R<sup>2</sup></i>	0.118			0.120			0.118			0.121			0.118		

### **7.5.2 Sensitivity analyses**

In order to provide reasonable assurance that the preliminary results in Table 7.4 are robust to the specifications of different measures, further sensitivity analyses are required to investigate the robustness of the main findings. First, an alternative measure of CSR is used to investigate the robustness of the primary results. Therefore, following the study by Haniffa and Cooke (2005), the present study uses the content analysis approach to capture the level of CSR. The number of words (see Section 4.5.2.1 of Chapter 4) is used as an alternative measure of CSR to examine whether the alternative measure of CSR affects the main result regarding the association between CSR and EM. The multiple pooled OLS regression is performed on a number of words as an alternative measure of CSR. This variable is defined as "CSRW" in the regression model. Second, an alternative measure of discretionary accruals is used as the dependent variable to test whether the main results in Table 7.4 are robust to different measurements or not. The Modified Jones model (MJM) is used as an alternative measurement for EM to investigate whether the alternative measure of EM has any effect on the preliminary results. Third, Ordinary Least Squares (OLS) with robust standard error is used as alternative estimator for OLS regression analysis.

#### **7.5.2.1 Alternative measurement of CSR**

The total score of CSR is found to be negatively and significantly related to discretionary accruals (Table 7.4). Following the previous studies, the number of words is used as an alternative measure for CSR in order to examine whether the

relation between EM and CSR is robust to different measurements or not. Table 7.10 presents the results of the multiple OLS regression for the full sample.

As can be seen from Table 7.9, the coefficient of CSRW is negatively related to the magnitude of discretionary accruals (*coef.* =  $-0.001$ ,  $t = -2.584$ ,  $p < 0.01$ ), suggesting that firms with higher amounts of CSR information report lower levels of discretionary accruals than those firms with lower amounts of CSR information. This result is consistent with the primary results (Table 7.4).

The coefficient of BRDEF is negatively and significantly associated with discretionary accruals (*coef.* =  $-0.010$ ,  $t = -2.677$ ,  $p < 0.01$ ), consistent with the main results (Table 6.5). The coefficient of AUDEF is negatively and insignificantly related to discretionary accruals. This result is in line with the main findings (Table 7.4).

The coefficients of OCF, LEVG and SIZE are negatively and significantly related to the magnitude of EM, suggesting that firms with higher OCF, firms with higher LEVG and larger firms are more likely to report lower levels of discretionary accruals. The aforementioned results are consistent with the primary results (Table 7.4). Table 7.9 also reveals that a positive and significant coefficient is found between LOSS and discretionary accruals, suggesting that firms that report losses tend to report higher discretionary accruals. This result corroborates the results of the main model (Table 7.4). The ROA and MB coefficients are not significantly related to discretionary accruals.

Based on the above, the results of the OLS regression analysis model presented in Table 7.9 provide evidence that the primary results (Table 7.4) are consistent and robust to different measures of CSR.

**Table 7-9: Alternative proxy for CSR (number of words)**

<i>PM</i>	<i>Exp. Sing</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>
<i>CSRW</i>	-	-0.001	-2.584	***
<i>BRDEF</i>	-	-0.010	-2.677	***
<i>AUDEF</i>	-	-0.004	-0.797	
<i>OCF</i>	?	-0.047	-2.065	**
<i>LEV</i>	?	-0.021	-2.207	**
<i>ROA</i>	?	0.013	0.473	
<i>SIZE</i>	?	-0.002	-1.814	*
<i>LOSS</i>	+	0.026	4.37	***
<i>MB</i>	?	0.000	0.814	
<i>Constant</i>	?	0.085	6.462	***
<i>Adj. R<sup>2</sup></i>		0.096		

*PM* = Discretionary accruals using Performance-adjusted model; *CSR*<sup>1</sup> = Corporate social responsibility; *BRDEF* = Board of directors effectiveness coded as 1 if more than 50% of directors on the board who are not on audit committee are independent, and at least a sample median of directors on the board are financial experts; and 0 otherwise; *AUDEF* = Audit committee effectiveness coded as 1 if all the members are independent, and at least a sample median are financial experts; and 0 otherwise; *OCF* = Operating cash flow; *LEV* = Financial leverage as measured by total liabilities to total assets ratio; *ROA* = Firm performance as measured by net revenue to total assets ratio; *SIZE* = Firm size as measured by natural logarithm of total assets; *LOSS* = Coded 1 if firm has loss; and 0 otherwise; *MB* = Market-to-book ratio.

### 7.5.2.2 Alternative measurement of EM

The PM model proposed by Kothari et al. (2005) is applied in this study as a primary model because the findings in chapter five reveal that it has a higher explanatory power compared with the JM and MJM models. Based on these results and the previous studies (Sun et al. 2010; Kothari et al. 2005), the PM is chosen as the

primary EM model. In addition, the findings in chapter five show that MJM is a secondary model in terms of its explanatory power compared with the JM. Therefore, MJM is used as an alternative model to investigate whether alternative measurement of discretionary accruals impacts the primary results or not. The MJM is commonly considered one of the most effective and powerful models for detecting EM practices; thus, it has been commonly used in previous studies (Abdul Rashidah and Ali 2006; Xie et al. 2003; Peasnell et al. 2000a).

The current study does not investigate any particular event; it focuses on the magnitude rather than the direction of EM. Following the previous studies (e.g. Dimitropoulos and Asteriou 2010; Sun et al. 2010; Klein 2002), the absolute value of the residual obtained from the yearly cross-sectional regression MJM as dependent variable is used as an alternative measure for EM.

The results of the OLS regression model of CSRI and other independent variables on discretionary accruals using MJM are presented in Table 7.10. The overall  $R^2$  is around 14%, which is relatively comparable to the results obtained by Dimitropoulos and Asteriou (2010); Abdul Rashidah and Ali (2006); and Frankel et al. (2002) and higher than that obtained from the main model (Table 7.4). The intercept is positive and significant at the 1% level.

The coefficient of CSRI is negatively and significantly related to earnings management (*coef.* = -0.058, *t* = -2.808, *p* < 0.01), consistent with the main results (Table 7.4) and suggesting that firms which provide more information related to CSR are reporting lower levels of discretionary accruals. The BRDEF coefficient is negatively and significantly related to discretionary accruals (*coef.* = -0.013, *t* = -

2.648,  $p < 0.01$ ), implying that firms with higher BRDEF report lower levels of EM. This result is in line with those results in the primary model (Table 7.4). Although the direction of the AUDEF coefficient is opposite to the direction in the main analysis (Table 7.4), it is consistent with it in that it is insignificantly related to the magnitude of discretionary accruals.

With regard to the control variables' coefficients, the results presented in Table 7.10 reveal exactly the same directions and significance as in the primary findings (Table 7.4).

In light of the above, the results of CSRI and other independent variables on discretionary accruals using the MJM as an alternative measure for EM are consistent with the primary results (Table 7.4), which indicates that the main results are consistent and robust to different types of discretionary accruals measurements and are not affected by the different measures of discretionary accruals.

**Table 7-10: Alternative proxy for EM (MJM)**

<i>MJM</i>	<i>Exp. Sing</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>
<i>CSRI</i>	-	-0.058	-2.808	***
<i>BRDEF</i>	-	-0.013	-2.648	***
<i>AUDEF</i>	-	0.006	1.223	
<i>OCF</i>	?	-0.077	-3.294	***
<i>LEV</i>	?	-0.021	-2.329	**
<i>ROA</i>	?	0.012	0.429	
<i>SIZE</i>	?	-0.004	-2.224	**
<i>LOSS</i>	+	0.045	4.686	***
<i>MB</i>	?	0.000	0.411	
<i>Constant</i>	?	0.112	6.155	***
<i>Adj. R<sup>2</sup></i>		0.140		

*MJM* = Discretionary accruals using Performance-adjusted model; *CSRI*= Corporate social responsibility score; *BRDEF* = Board of directors effectiveness coded as 1 if more than 50% of directors on the board who are not on audit committee are independent, and at least a sample median of directors on the board are financial experts; and 0 otherwise; *AUDEF* = Audit committee effectiveness coded as 1 if all the members are independent, and at least a sample median are financial experts; and 0 otherwise; *OCF* = Operating cash flow; *LEV* = Financial leverage as measured by total liabilities to total assets ratio; *ROA* = Firm performance as measured by net revenue to total assets ratio; *SIZE* = Firm size as measured by natural logarithm of total assets; *LOSS* = Coded 1 if firm has loss; and 0 otherwise; *MB* = Market-to-book ratio.

### 7.5.2.3 Alternative multivariate regression estimator

The pooled OLS regression model is used as the primary model according to the nature of the study data. According to Gujarati (2003), the ordinary least squares (OLS) regression with robust standard errors (Huber-White standard errors) regression analysis model is one of the most commonly used models for correcting and controlling for heteroscedasticity problems. To provide further evidence of whether the main Pooled OLS regression model results (Table 7.4) are or are not affected by the different regression estimators, OLS regression with robust standard errors is used as an alternative multivariate regression estimator. In this regard,



Gujarati (2003) argues that OLS with robust standard errors provides better estimates because it controls for heteroscedasticity problems. Therefore, following the study by Dimitropoulos and Asteriou (2010), OLS regression with robust standard errors is used in the present study to examine whether or not the primary results are robust to different regression estimators.

The results of the robust OLS regression, employed as an alternative measure to GLS regression are presented in Table 7.11. As can be seen from Table 7.11 below, the CSRI coefficient is negatively and significantly related to discretionary accruals (*coef.* = -0.058, *t* = -2.808, *p* < 0.01), suggesting that firms with a higher level of CRS report a lower levels of discretionary accruals. A significant and negative coefficient of BRDEF is consistent with the findings of Table 7.4, indicating that firms with higher BRDEF are more likely to report a lower magnitude of discretionary accruals. In line with the primary results in Table 7.4, the coefficient of AUDEF reveals an insignificant relationship with discretionary accruals.

The coefficients of OCF, LEV, and SIZE are negatively significant, consistent with the results in Table 7.4. The coefficient of LOSS is positively and significantly related to the magnitude of discretionary accruals, consistent with the primary results (Table 7.4). ROA and MB coefficients show insignificant relationships with discretionary accruals.

In summary, the results of alternative multivariate regression analysis using OLS robust standard error regression are consistent with the primary findings presented earlier in Table 7.4, suggesting that the main results are robust and consistent with different regression estimators.

**Table 7-11: The results of (OLS) robust standard error regression**

<i>PM</i>	<i>Exp. Sing</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>
<i>CSRI</i>	-	-0.067	-3.922	***
<i>BRDEF</i>	-	-0.010	-2.796	***
<i>AUDEF</i>	-	-0.004	-0.823	
<i>OCF</i>	?	-0.047	-1.953	*
<i>LEV</i>	?	-0.020	-2.159	**
<i>ROA</i>	?	0.017	0.837	
<i>SIZE</i>	?	-0.003	-2.189	**
<i>LOSS</i>	+	0.026	4.204	***
<i>MB</i>	?	0.000	0.937	
<i>Constant</i>	?	0.105	7.435	***
<i>Adj. R<sup>2</sup></i>		0.118		
<i>F-statistics</i>		5.37		
<i>P-value</i>		***		

**PM** = Discretionary accruals using Performance-adjusted model; **CSRI**= Corporate social responsibility score; **BRDEF** = Board of directors effectiveness coded as 1 if more than 50% of directors on the board who are not on audit committee are independent, and at least a sample median of directors on the board are financial experts; and 0 otherwise; **AUDEF** = Audit committee effectiveness coded as 1 if all the members are independent, and at least a sample median are financial experts; and 0 otherwise; **OCF** = Operating cash flow; **LEV** = Financial leverage as measured by total liabilities to total assets ratio; **ROA** = Firm performance as measured by net revenue to total assets ratio; **SIZE** = Firm size as measured by natural logarithm of total assets; **LOSS** = Coded 1 if firm has loss; and 0 otherwise; **MB** = Market-to-book ratio.

#### 7.5.2.4 Controlling for endogeneity

Several recent studies have realised that models containing EM and disclosure suffer from endogeneity bias (Choi et al. 2013; Cornett et al. 2008; Lobo and Zhou 2001; Kasznik 1999). The particular form of endogeneity problem between EM and CSR is that of simultaneity which occurs when both EM and CSR are determined either by internal factors such as managers' overall policies or by external factors such as legal effects, regulations and rules related to the market for corporate control; it may even be determined by a combination of internal and external factors (Choi et al.

2013; McKnight and Weir 2009). Therefore, ignoring the existence of the simultaneity problem may lead to inconsistent, inefficient and biased inferences when addressing the relation between EM and CSR (McKnight and Weir 2009).

In order to overcome this problem, previous literature has suggested several solutions to control for endogeneity bias. One of these solutions is the use of instrumental variables (IV) (Choi et al. 2013; McKnight and Weir 2009; Coles et al. 2008; Linck et al. 2008; Himmelberg et al. 1999; Hermalin and Weisbach 1991). The other alternative is the use of simultaneous equations (Coles et al. 2008; Cornett et al. 2008; Kasznik 1999; Hermalin and Weisbach 1991). Although these two approaches are considered alternative solutions to solve the problem of endogeneity, Coles et al. (2008); and Himmelberg et al. (1999) used both instrumental variables and simultaneous equations approaches and obtained similar results. Therefore, following the approach used by Choi et al. (2013); McKnight and Weir (2009); Coles et al. (2008); and Hermalin and Weisbach (1991), the present study uses the lagged values of endogenous independent variable (CSRI) as an instrumental variable (IV) to investigate whether or not the simultaneity problem affects the relation between discretionary accruals and CSR.

In order to use the instrumental variable (IV) two-stage regression (2SLS) approach, it is necessary to use the Hausman test to test whether the endogeneity bias for the endogenous variable and independent variable exists or not (Gujarati 2003). When applied, the Hausman test gave a  $\chi^2$  of 38.89 ( $p = 0.000$ ), which suggests that the null hypotheses of no endogeneity between EM as dependent variable and CSRI as independent variable is rejected. Hence, the existence of the endogeneity problem

may affect the results of the regression model, thus causing the results to be biased, ineffective and inconsistent. Therefore, instrumental variable (IV) 2SLS regression is performed to control for the simultaneity problem as well as to investigate whether the existence of endogeneity in the main model has an effect on the results.

The results of the second stage of 2SLS regression of CSRI and other independent variables on discretionary accruals are presented in Table 7.12. After controlling for the simultaneity, the coefficient of CSRI is negatively and significantly related to discretionary accruals (*coef*, = -0.096, *z* = -2.021, *p* < 0.05), suggesting that firms with higher levels of CSR report lower discretionary accruals. This result is in line with the previous results of GLS and OLS models reported earlier in Tables 7.4 and 7.11 respectively, although the level of significance is lower compared with the previous results. Furthermore, it corroborates the findings of Choi et al. (2013), who find a negative simultaneity relation between CSR and EM. In other words, the result indicates that firms with higher discretionary accruals report lower CSR. With the existence of simultaneity, causality can run in both directions between discretionary accruals and CSR and both of them are endogenously determined, indicating that CSR can be one of the factors that influence discretionary accruals and, in the opposite direction, discretionary accruals can be a plausible factor impacting CSR.

As expected, and consistent with the results of GLS and OLS models, the BRDEF coefficient is negatively significant (*coef*, = -0.010, *z* = -2.805, *p* < 0.01), suggesting that firms with higher BRDEF report lower discretionary accruals. An insignificant relation is captured between AUDEF and discretionary accruals, which is in line with the previous results of both GLS and OLS models.

With respect to the control variables, the results reveal relatively similar results, which suggest that these results are consistent with the main findings (Table 7.4). Although some coefficients reveal less significant levels, the direction and significance of the relationships with discretionary accruals remain the same.

In summary, the instrumental variables (IV) 2SLS model results are consistent with the main results in Table 7.4, suggesting that the simultaneity problem between CSR and discretionary accruals does not affect the primary results of CSR and other independent variables on discretionary accruals.

**Table 7-12: Instrumental variables two-stage (IV 2SLS) model**

<i>PM</i>	<i>Coef.</i>	<i>t</i>	<i>P&gt;t</i>
<i>CSRI</i>	-0.096	-2.021	**
<i>BRDEF</i>	-0.010	-2.805	***
<i>AUDEF</i>	-0.004	-0.758	
<i>OCF</i>	-0.047	-1.945	*
<i>LEVG</i>	-0.020	-2.173	**
<i>ROA</i>	0.016	0.778	
<i>SIZE</i>	-0.002	-1.946	*
<i>LOSS</i>	0.026	4.263	***
<i>MB</i>	0.000	1.184	
<i>Constant</i>	0.114	5.893	***
<i>Adj.R2</i>	0.115		

## 7.6 Discussion of Results

This section provides the results of empirical findings on the association between EM and CSR in the FTSE 350 Index firms over the period of three years from 2008 to 2010. The literature suggests two perspectives on the relation between EM and CSR:

long-term and managerial opportunism perspectives (Choi et al. 2013). The long-term perspective argues that firms with high levels of CSR are not only focused on increasing current profits and managers' benefits but are also aiming to build and improve strong future relationships with stakeholders. Therefore, such firms will act in a responsible way when reporting financial information. In line with this perspective, previous empirical findings show a negative association between EM and CSR (Choi et al. 2013; Pyo and Lee 2013; Kim et al. 2012; Hong and Andersen 2011; Chih et al. 2008). On the other hand, the managerial opportunism perspective argues that firms may strategically engage in CSR to mask their opportunistic EM behaviour. In such cases, CSR is used as an entrenchment tool to hide this opportunistic behaviour and to protect firms' managers against stakeholders' potential vigilance and reaction. In line with this perspective, several previous empirical findings reveal a positive relationship between EM and CSR (Jiang et al. 2013; Heltzer 2011; Yip et al. 2011; Gargouri et al. 2010; Prior et al. 2008; Patten and Trompeter 2003).

Two types of analysis are performed in this chapter to investigate the relationship between EM and CSR. These types are univariate and multivariate tests. The univariate test uses the t-test and Mann Whitney U test, while the multivariate test applies multiple pooled OLS regression analysis. In addition, several sensitivity tests are performed to compare and confirm that the main results are consistent and robust. In general, the findings are in line with the long-term perspective, which assumes a negative relationship between EM and CSR.

In respect to the level of EM, the findings of the univariate test reveal that firms with a high level of CSR have a low level of EM, and that the level of CSR is significantly different at the 1% level between High and Low EM firms. These results are confirmed when regression analysis is applied, and the results show a negative association between EM and CSR, implying that firms with a high level of CSR report a low magnitude of EM. This result is also supported through an examination of the association between the level of CSR sub-themes and EM. The results of regression analysis show that the levels of COM, EMP, ENV and PRO are negatively related to the extent of EM, suggesting that firms with a high level of such information report lower levels of EM. However, there is no evidence of such a relationship between the levels of CUS and OTH and the magnitude of EM, suggesting that the levels of CUS and OTH do not affect the level of EM.

Regarding the effect of the type of industry on the association between EM and CSR, the findings reveal that industry type has no effect on the relationship between the two variables and that the primary findings are consistent and robust for the different industries. Furthermore, this chapter investigates the association between the direction of EM (i.e. income-increasing and income-decreasing EM) and CSR. In general, the findings show that firms with a high level of CSR engage in a low level of income-increasing and income-increasing EM, suggesting that firms with a high level of CSR are less likely to engage in EM in both directions.

In order to test whether the primary findings are consistent and robust to the specifications of different measures, several sensitivity analyses are performed. These analyses are as follows: alternative measure for CSR; alternative measure for

EM; alternative multivariate regression estimator; and control for endogeneity problem between EM and CSR. In general, the results of these tests show that the main results are consistent and robust to different measurements.

In respect of the effect of board of directors and audit committee effectiveness on EM, the results reveal that firms with a high level of board of directors' effectiveness report a lower magnitude of EM compared with those firms with a low level of board of directors' effectiveness. However, there is no an evidence that firms with a high level of audit committee effectiveness report a low level of EM, suggesting that the level of audit committee effectiveness does not impact the magnitude of EM.

In light of the above, the findings of the present chapter are in line with the long-term perspective, which assumes a negative relationship between EM and CSR. This assumption argues that a firm with a high level of CSR is focused not only on increasing current profits but also on improving the firm's image and building strong relationships with stakeholders. In addition, this perspective is in line with the assumption provided by agency theory, which argues that CSR information is an essential tool to reduce information asymmetry between managers and shareholders when the interests of the two groups conflict.



## 7.7 Summary

This chapter examines the relationship between EM and CSR in FTSE 350 Index companies for the period 2008-2010. The findings suggest that the level of CSR information has a negative impact on the level of EM. This is in line with the long-term perspective, which assumes that firms issuing a high level of CSR information are more concerned about their relationships with stakeholders rather than simply focusing on increasing profits. Table 7.13 summarises the results of the hypotheses testing in this chapter.

**Table 7-13: Summary of Hypotheses and Results**

<i>Hypothesis</i>	<i>Results</i>
<i>H1: There is a negative relationship between the level of EM and CSR</i>	<i>Supported</i>
<i>H2: There is a negative relationship between the level of EM and COM sub-score</i>	<i>Supported</i>
<i>H3: There is a negative relationship between the level of EM and EMP sub-score</i>	<i>Supported</i>
<i>H4: H4' There is a negative relationship between the level of EM and ENV sub-score</i>	<i>Supported</i>
<i>H5: 'There is a negative relationship between the level of EM and PRO sub-score</i>	<i>Supported</i>
<i>H6: 'There is a negative relationship between the level of EM and CUS sub-score</i>	<i>Not supported</i>
<i>H7: There is a negative relationship between the level of EM and PRO sub-score</i>	<i>Not supported</i>

## Chapter Eight

### Summary and Conclusions

**8.1 Introduction** Previous studies provided two different perspectives with respect to the association between EM and CSR. The first perspective argued that firms with a higher level of CSR information engage in a higher magnitude of EM and proponents of this view found a positive association between CSR and EM (Jiang et al. 2013; Heltzer 2011; Yip et al. 2011; Gargouri et al. 2010; Prior et al. 2008; Patten and Trompeter 2003). On the other hand, proponent of the second perspective argue that firms with a higher level of CSR information have a lower level of EM, suggesting that CSR and EM are negatively associated (Choi et al. 2013; Pyo and Lee 2013; Kim et al. 2012; Hong and Andersen 2011; Chih et al. 2008). These different findings have motivated the present study to examine whether or not the level of CSR relates to the magnitude of EM in the context of the UK, based on the FTSE 350 Index firms during the fiscal years from 2008 to 2010. In order to achieve the study aim, the researcher devised the following primary research question:

**“Is there a relationship between EM and CSR in UK companies?”**

This chapter is organised as follows: Section 8.2 presents an overview of the study findings. Section 8.3 discusses the implications of the research findings. The study's limitations and areas for future research are presented in sections 8.4 and 8.5 respectively.

## 8.2 The Study Findings

### The practice of EM in UK companies

Chapter Five has presented the findings pertaining to this objective by using both univariate and multivariate analyses. Comparative analysis based on estimated results from the pooled OLS regression has been used to evaluate the three EM models: the Jones (1991) (JM), the Modified Jones (Dechow et al. 1995) (MJM) and the Performance - Matched (Kothari et al. 2005)(PM) models. Firstly, the findings have revealed that  $\Delta\text{REV}-\Delta\text{REC}$  was the variable that made the strongest significant contribution to MJM and PM models, while PPT was the weakest variable in the three models. Comparing the coefficient of  $\Delta\text{REV}-\Delta\text{REC}$  variable, it was discovered that the strongest contribution by this variable was to the PM model. Secondly, the findings have revealed that PM has the highest explanatory power in terms of Adjusted  $R^2$  with 35 per cent as compared to 29 and 31 per cent for JM and MJM respectively. In view of these findings, the PM model was used as a primary model in the present study to measure EM.

Univariate analysis was based on the t-test to examine whether or not the means of high and low EM as well as positive and negative EM firms are insignificantly different from zero. In respect of the differences between high and low EM groups, the findings have showed that the differences between the means in the two groups were insignificant across years and industries. Regarding the differences between positive (income - increasing) and negative (income -decreasing) EM, the findings, in general, have revealed that across years and industries, the differences between the means in the two groups were insignificant at the 0.01 level.

#### **The level of CSR information in the UK**

This objective has been addressed in chapter Six by testing the overall level and six themes of CSD as proxy for CSR through using both content analysis and disclosure index methods. The CSD themes were community (COM), employees (EMP), environment (ENV), products and services (PRO), customers (CUS), and others (OTH). According to the number of companies, the overall results have revealed that a higher number of UK firms are more interested in EMP, COM, ENV, and PRO, but are less concerned with OTH and CUS.

As for the content analysis approach, the findings have showed that the EMP theme has the highest number of words, followed by the COM and ENV themes. The OTH and PRO are the fourth and fifth themes respectively, while the CUS theme has the lowest number of words. The findings of the disclosure index have revealed similar results to those of the content analysis. On average, the findings have showed that EMP has the highest score, followed by COM. The third score is awarded to ENV, while the OTH and PRO are awarded the fourth and fifth scores respectively. The lowest score was awarded to CUS.

### **The relationship between the magnitude of EM and the level of CSR in the UK**

The third research objective has been addressed in chapter Seven by using both univariate and multivariate analyses. Seven hypotheses were identified to answer this question and the overall results have suggested that the level of CSR impacts the magnitude of EM. In particular, firms with high levels of CSR report a lower magnitude of EM.

Consistent with hypothesis 1 that there is a negative (positive) relationship between the level of EM and the total level of CSR information, the results have revealed a negative and significant relationship between the magnitude of EM and the level of CSR. This result implies that firms with a high level of CSR information report a lower level of EM. Hypothesis 2 has predicted that the level of EM is negatively (positively) associated with the level of the EMP theme. The results have showed that EM is negatively significant related to EMP, suggesting that firms with high level of EMP information report low levels of EM.

In respect of COM information, the results have revealed that firms with a high level of COM information report a lower level of EM, thus supporting hypothesis 3 which has predicted a negative (positive) association between EM and the COM theme. Consistent with hypothesis 4, which has predicted a negative (positive) relationship between EM and the ENV theme, the results have indicated that companies with a high level of ENV information report a low level of EM.

Hypothesis 5 has predicted that the association between EM and the PRO theme would be negative (positive). The results are in line with this hypothesis as they have revealed that the magnitude of EM is negatively significant related to PRO information, hence suggesting that firms with a high level of PRO information report a low level of EM. Contrary to hypothesis 6, which has suggested a negative (positive) relationship between EM and the CUS theme, the results have showed that there is no significant association between the level of EM and the level of CUS information. With respect to the OTH theme, the results have revealed that EM and the OTH theme are insignificantly related to each other, contrary to hypothesis 7

which has predicted that the association between the level of EM and OTH information would be negative (positive).

When the study sample was divided into firms with positive (income - increasing) EM and firms with negative (income - decreasing) EM, the results have showed that firms with a higher level of CSR information engage in a lower level of income - increasing and income - decreasing EM. In addition, the results of the potential impact of the type of industry on the association between EM and CSR have revealed that the type of industry does not affect the association between the two variables.

The application of the alternative measurement of EM based on the MJM measurement has revealed that the main results are consistent and robust to the different measurements of EM. In addition, the results have revealed that the main results are consistent and robust to the different measurements of CSR, specifically when using the number of words as an alternative measurement to disclose scores. The study has also applied the alternative multivariate regression estimator and found out that the main results are not affected by the specific regression estimator. With regard to the endogeneity problem, the researcher has tested whether or not its existence impacts the main results of the study. It has been discovered that the main results are consistent and robust and are not affected by the problem of endogeneity between EM and CSR.

### **8.3 The Study Implications**

The findings of this study have revealed that firms with a higher level of CSR information in annual and CSR reports are less likely to manipulate reported

earnings. These findings may have several implications. As CSR information is publicly observable, the findings of this study may have practical implications for firms' executives in terms of evaluating their financial transparency and accountability, which may help corporations to enhance investors' perception of the quality of financial reporting. In addition, the findings may be used by corporate governance boards to assess the quality of financial reporting based on the level of CSR information.

Furthermore, the findings may provide an empirical support that enables shareholders and market participants to improve their decision - making when evaluating the reliability and quality of financial reports. Financial analysts may use the findings presented in the present study to evaluate how the level of CSR information, as a tool for concentrating EM practices, affects capital market decisions. If the market perceives that firms with higher levels of CSR information are associated with higher financial reporting quality, the reported financial statement may be viewed as more reliable for investment decisions and credit assessment.

Furthermore, gaining a better understanding of the influence of CSR information on the manipulation of earnings can help authorities and regulators, especially in the UK, to develop their regulations and make further recommendations on CSR. The findings of the study can also be used as an empirical support for stock market authorities to evaluate the current CSR information requirements and their role in improving the quality of financial reports. From a research perspective, the findings are generally useful for researchers interested in investigating the different aspects

of EM to control the effect of the level of CSR information as one of the determinants of EM.

#### **8.4 Limitations of the study**

Although a considerable effort was made to ensure that the study aim was met and the research questions were answered, the study suffers from several limitations. Firstly, the sample size of this study is limited to the top UK FTSE 350 Index firms. Thus, the findings of the study may not be applicable to firms outside the FTSE 350 Index because the level of CSR information may vary according to firm size.

Secondly, the data used in this study is limited to the period stretching from 2008 to 2010, with 2008 being considered by economists as the year when the global financial crisis started. Thus, there is a possibility that the findings may have been driven by the changes in the particular year(s) during or after such financial crisis.

Thirdly, since the accruals models have been criticised in the previous literature due to the likelihood of misclassifying total accruals into its components, discretionary and non - discretionary accruals, the dependent variable may have been subject to some measurement errors. In addition, the perspective of EM indicated in this study is related to opportunistic EM behaviour. However, managers may use EM to provide private information to the firm's shareholders regarding future returns which, in turn, maximise the firm's value. Therefore, the findings of this study are restricted to the assumption of opportunistic EM rather than the informative EM perspective. However, the existing literature has not provided a clear method for distinguishing between the opportunistic and informative EM perspectives.



## 8.5 Suggestions for Future Research

There are several areas into which future studies on the association between CSR and EM might be extended. Firstly, although this study has addressed the endogeneity problem between EM and CSR, future research should consider using lagged data for all financial variables. In this regard, Dhaliwal et al. (2011) suggest that the use of lagged variables can control for the endogeneity problem.

Secondly, as previously noted in the limitations, the results of this study are based on the perception of EM as opportunistic behaviour rather than looking at it from an informative perspective. Therefore, future research should investigate CSR and EM from an informative perspective. In addition, the current study has used total discretionary accruals as a proxy for EM to investigate the association between EM and CRS; therefore, future research should use different proxies for EM, such as short - term and long - term discretionary accruals as well as real EM activities, to address the association between EM and CSR.

Thirdly, studies on the role of CSR and corporate governance in constraining EM can be tested by taking into account the complementary and substituting of the joint effect of both CSR and corporate governance on financial reporting quality. Such studies may contribute to the understanding of the effect of CSR and corporate governance mechanisms in association with the quality of accounting reports.

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## Appendices

### Appendix 1: Checklist of CSD Themes

#### Employee

- Number of employees
- Employee's salary
- Health and safety in the workplace
- Employee equal opportunities
- Employee benefits
- Employee remuneration
- Employee's satisfaction
- Profit sharing/bonus scheme policy
- Employee share ownership
- Employee education and training
- Accident in the workplace
- Other

#### Community

- Participation to community activities around the company
- Community donations/Charity
- Community health supporting
- Local community education
- Participation in government social campaigns
- Awards related to community achievement
- Other special community related activities

#### Products/services

- Product/service development(research and development)
- Product safety
- Product/service quality
- Others

#### Customers

- Customer services
- Customer compliant
- Customer satisfaction
- Others

#### Environment

- Materials used
- Waste
- Recycling
- Packaging
- Water consumption
- Conservation of natural resources

- Impact in the environment
- Designing facilities harmonious with the environment
- Repairs/Protection to environmental damage
- Energy consumption
- Use of waste material for energy production
- Development of new sources of energy
- Carbon credits
- Emission of greenhouse gases
- Clean Development Mechanisms
- certified Emission Reduction s
- Actual environmental policies
- Environmental goals, targets and objectives
- Compliance with regulations and requirements
- Environmental Partnerships
- Environmental education
- Environmental research
- Environmental management
- ISOs 14.000
- Environmental auditing
- Contributions to beautify the environment
- Wildlife conservation
- others

#### **Others**

- General health and safety information
- General disclosure of corporate objectives /policies relating to the social responsibility of the company to the various segments of society
- Report about the presence of corporate social responsibility committee and its members and activities
- Information about awards received by the company concerning its social responsibility, or the presence of the company in one, or more, social indexes

## **Appendix 2: Decision Rules for CSD**

- All CSR information must be related to the firms and its activities.
- All disclosures must be specifically stated, they cannot be implied.
- If any word has more than one possible classification, the word should be classified as to the activity most emphasized in the word.
- Any disclosure which is repeated shall be recorded as a CSD word each time it is discussed.
- All sponsorship activities to be included, no matter how much it is advertised.

### Appendix 3: List of CSD Key Words

CSD Category	Key words
<b>Employee</b>	<ul style="list-style-type: none"> <li>• Employee(s)</li> <li>• Human Resources</li> <li>• Salary</li> <li>• Wages</li> <li>• Remuneration</li> <li>• Bonus</li> <li>• Benefits</li> <li>• Profit sharing</li> <li>• Equal opportunities</li> <li>• Healthy</li> <li>• Safety</li> <li>• Accident</li> <li>• Workplace</li> <li>• Employee education</li> <li>• Employee training</li> <li>• Employee satisfaction</li> <li>• Employee police(s)</li> </ul>
<b>Community</b>	<ul style="list-style-type: none"> <li>• community</li> <li>• Participation</li> <li>• Donations</li> <li>• Charity</li> <li>• Community Health</li> <li>• Community education</li> <li>• Community training</li> <li>• Social campaigns</li> <li>• Community achievement</li> <li>• Community activities</li> <li>• Community police(s)</li> </ul>
<b>Products/Services</b>	<ul style="list-style-type: none"> <li>• Product (s)</li> <li>• Service(s)</li> <li>• Product development</li> <li>• service development</li> <li>• Product safety</li> <li>• Product quality</li> <li>• Service quality</li> <li>• Product police(s)</li> <li>• Service police(s)</li> </ul>
<b>Customers</b>	<ul style="list-style-type: none"> <li>• Customer(s)</li> <li>• Customer services</li> <li>• Compliant</li> <li>• Customer satisfaction</li> <li>• Customer police(s)</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>• Environment</li> <li>• Environmental</li> <li>• Material(s)</li> <li>• Waste</li> <li>• Recycling</li> <li>• Packaging</li> <li>• Water</li> <li>• Consumption</li> </ul>

	<ul style="list-style-type: none"> <li>• Conservation</li> <li>• Natural resources</li> <li>• Impact</li> <li>• Harmonious</li> <li>• Repair(s)</li> <li>• Protection</li> <li>• Energy</li> <li>• New sources</li> <li>• Carbon</li> <li>• Emission</li> <li>• Greenhouse</li> <li>• Gas(s)</li> <li>• Emission</li> <li>• Clean</li> <li>• Environmental police(s)</li> <li>• Environmental goals</li> <li>• Environmental targets</li> <li>• Compliance</li> <li>• Environmental Partnership(s)</li> <li>• Environmental education</li> <li>• Environmental auditing</li> <li>• Environmental research</li> <li>• Environmental management</li> <li>• ISO</li> <li>• Environmental contribution(s)</li> <li>• Wildlife</li> <li>• Environmental police(s)</li> </ul>
<b>Others</b>	<ul style="list-style-type: none"> <li>• Social</li> <li>• Health</li> <li>• Safety</li> <li>• Objectives</li> <li>• Policies</li> <li>• Awards received</li> <li>• social indexes</li> </ul>